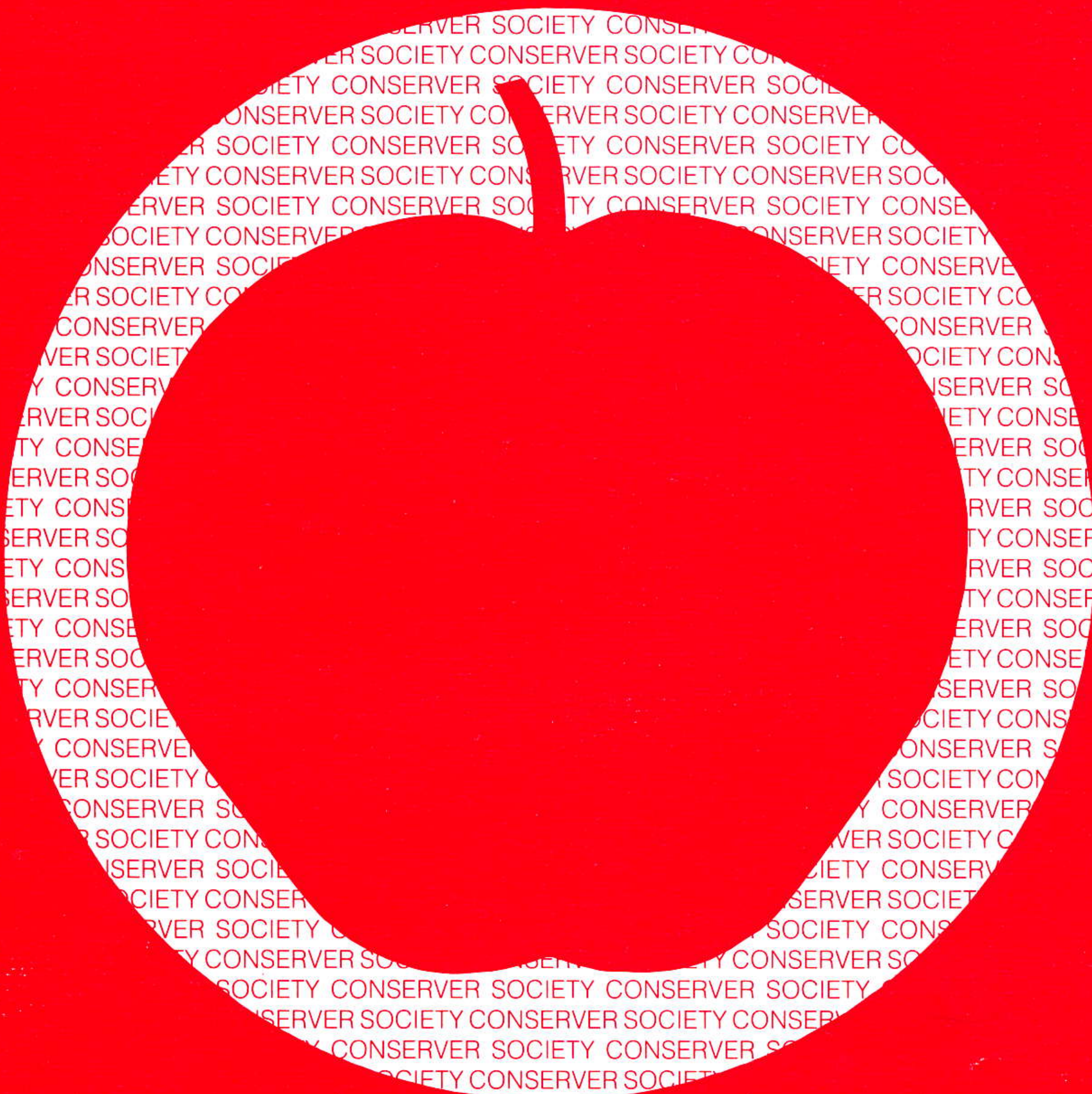
Canadian Home Economics Journal

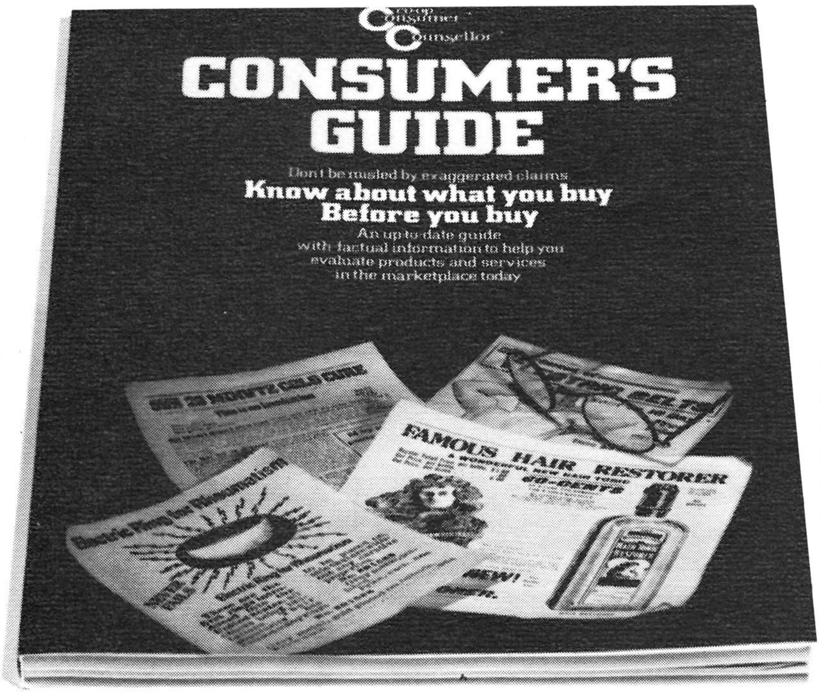
Revue Canadienne d'Economie Familiale

Winter 1980 Volume 30, No. 1

Hiver 1980 Volume 30, No 1



CO-OP CONSUMER'S GUIDE



Consumer's Guide Features:

Content:
- All-Canadian
- Carefully researched and collected from reliable sources
- Revised - expanded and updated

New Format:
- Easy access to information
- Indexed for fast fact-finding
- 200 pages, more information per page
- Handy charts, tables, and checklists

Three Good Reasons to Order Your Consumer's Guide
- Helpful guide in making wise, well-informed purchasing decisions
- Handy reference at home, school, and office
- Great gift idea for family and friends

The Consumer's Guide covers a wide variety of topics including Consumerism, Produce, Meat and Dairy, Appliances, Dry Goods, Health, Safety, Recreation, and Housing. The information has been gathered from excellent sources - the Canadian Consumer; Consumer Reports; Federal and Provincial Departments of Consumer and Corporate Affairs, Agriculture, and Health; and Utility Companies. You'll appreciate the Consumer's Guide for yourself or for your colleagues. It's also great for teachers who want to use the information sheets individually as hand outs. In the province of British Columbia the Consumer's Guide has been adapted as a textbook for consumer education classes. They have also had it transcribed into Braille and adapted for the visually impaired. The uses of this book are limitless. Order one today. Use the handy order form below.

A goldmine of information

Being a consumer isn't easy. It's difficult to make shopping decisions these days when you're faced with the many products available. Co-op Consumer's Guide can help you by answering some of your questions. It won't tell you what brand to buy but it will give you enough information so that you can make up your own mind. Easy to read Consumer's Guide. . .it really is a goldmine of information.

Co-op Consumer Counsellor

Send to:
Member & Public Relations
Federated Co-operatives Limited
Box 1050
Saskatoon, Saskatchewan
S7K 3M9

Please allow three weeks for delivery

Please send me:

________ copies of the Consumer's Guide at $3.50/copy

Individual sheets are also available at $2.25/100 sheets. Send for a complete list of topics available.

I enclose a cheque or money order for $ _____ to cover the total amount of my purchase.

Name ______________________________

Address ______________________________

City _______________ Province _______________

Postal Code ______________________________

Canadian Home Economics Journal

Revue Canadienne d'Economie Familiale

ISSN 008-3763

Subscriptions, membership and change of address should be mailed to the National Office. Membership fee is due May 1st. Forms available from the National Office.

Subscriptions are available to libraries, institutions and individuals not eligible for membership in the Association at the rate of $12.00 per year ($13.50 per year USA or Foreign) or $3.50 per single copy.

Cover design by Hilary Fedoruk

Typeset by Superior Typesetting
Printed by Co-op Press
Edmonton, Alberta

Winter Issue 1980 — Volume 30 No. 1

Published quarterly
Canadian Home Economics Association
L'Association Canadienne d'Economie Familiale

CHEA Call for Nominations

Honor Award

• The Honor Award shall be awarded from time to time to members of the Canadian Home Economics Association who have made or who are making a distinct contribution to the Association and/or to the profession of home economics.

• The award shall be granted for distinction associated with outstanding effort toward furthering the stated aims and goals of the Association and/or with outstanding accomplishment in any field of home economics, in each case recognizing integrity, scholarship, breadth of knowledge, experience, leadership, and service to the community.

• The candidates shall be those who have had at least 10 years as active members of the Association. There shall be no limitation as to age. The award is intended to be a stimulus to professionlly active people.

• Nomination of a candidate shall be made to the Chairman of the Awards Committee by 6 members in good standing, at least one of whom must be a member of the Board of Directors of CHEA. Application forms for documentation of the nominee for this honor are available from the General Secretary of CHEA at the National Office in Ottawa.

• Nominations must be sent to the Chairman of the Awards Committee before February 15 of the year in which the award is to be considered.

• One nomination may be selected by the Awards Committee in each year from among the candidates nominated and submitted to the Executive for perusual and to the Board of Directors for final approval. If in the opinion of the Awards Committee the work of the candidates nominated does not warrant the award, an award may be omitted in a given year.

Honorary Member

• Honorary membership shall be awarded from time to time to distinguished individuals who have attained eminence through their contributions to the profession of home economics, but who do not qualify as home economists.

• Nomination of a candidate for this honor should be someone who is a member of an allied professional or technical group who has contributed to the furthering of the stated aims of the profession, *or* who by reason of his/her own professional activities has come to be associated with the profession in a manner which has been mutually beneficial and rewarding.

• Nomination of a candidate shall be made to the Chairman of the Awards Committee by any six members in good standing. Application forms for documentation of the nominee for this honor are available from the General Secretary of CHEA at the National Office in Ottawa.

• Nominations must be sent to the Chairman of the Awards Committee before February 15 of the year in which the award is to be considered.

• One nomination may be selected by the Awards Committee in each year from among the candidates nominated and submitted to the Executive for perusual and to the Board of Directors for final approval. If, in the opinion of the Awards Committee, the work of the candidates nominated does not warrant the award, an award may be omitted in a given year. At no time should there be more than three Honorary Members of the Association.

Nominations are being received *now for 1980. Forms available from the General Secretary, CHEA, 203 Burnside Bldg., 151 Slater Street, Ottawa, Ontario. K1P 5H3.*

COMMUNIQUE

from the Executive

Barbara Baczynsky, Secretary

The purpose of this addition to the *CHE Journal* is to share with our membership the concerns and aspirations of the executive.

Since the Annual Meeting in St. John's in July, the executive has held three meetings — one with the Winnipeg executive and two via conference telephone with our president-elect in Toronto and our treasurer and executive director in Ottawa. The following are some of the items raised for discussion in those meetings:

- The recruitment of members for CHEA continues to be of great concern to the executive. As of September 30, 1979 our membership stood at 1646, as compared to 1503 in 1978. The original membership goal of this executive was to double our membership by July 1980. Attaining a membership of 3000 is our goal. *If each member secures one new member our membership will double.* For home economists to have an impact on people and society we must have a stronger membership.
- The following indicates the *number below budgeted number* of members in each category: regular 185, reserve 37, 1979 grads 46 and undergraduates 77. Our Membership Chairman, Janice Shivers, has been working very hard developing a new membership campaign with support material; we all anxiouly await the results.
- The Mid-Year Board Meetings are being held in Winnipeg on January 11, 12, and 13, 1980. A good attendance is anticipated and hopefully much progress will be made.

(Continued on page 43)

Front Line Public Relations Team

Public relations is a most significant function of the Canadian Home Economics Association. Our Public Relations Committee is given the responsibility of making the activities of the Association and the profession known to the public, to other professional groups and to our members. In short, to produce a positive image of **home economics.** A local core committee and representatives across the country complete Jane Langdon's active working group.

But — when it comes to image-building, nothing has more impact in a local setting than the home economists themselves. The contribution and commitment of the home economist on the health or social agency team, in the teaching group or the company boardroom, counts for so much more than the brochures, press releases and media exposure resulting from the work of a committee.

By now, you have guessed the direction of my remarks. Each member of the Association, each home economist, **is** a public relations officer for home economics. Like the genes determining the colour of one's eyes, this responsibility is inescapable, assumed with the acceptance of the professional degree. The only aspect of the responsibility that one can control is the quality of the public relations, whether it is good or poor, whether it reflects a vital active profession, grappling with large issues in today's world or an unflattering image of irrelevance, a subject area that can be ignored.

Since you, the members, form our front-line public relations team, we count on you to proudly proclaim your profession, to help the association and the Public Relations Committee extend information about our discipline to others, to provide an accurate picture of the competencies of graduates from home economics programs, both the specialty areas within home economics and the generalist home economist. Fortunately, this task should not be difficult.

Due to the vagaries of the postal system, I received the Fall issue of the *Journal* and the September *Newsletter* at approximately the same time and have read them together. The result is a strong impression of many varied and worthwhile activities being carried out by home economists. One might suggest that the profession is more relevant and vital now than it has ever been. Issues which fall within our expertise, (such as consumer safety, conservation, nutrition, parenting and many others) are newsworthy items and public concerns. Numerous needs of individuals and families in their near environment are waiting to be served.

Of course, being alert to public relations requires some effort. It means wearing your home economics hat, at all times, so that your professional background gets some credit, along with the individual "you", for the contributions that you make. It requires keeping up-to-date in one's field, knowing what the profession is about and sharing this with others. It depends on good communication, rapport and good will with other groups.

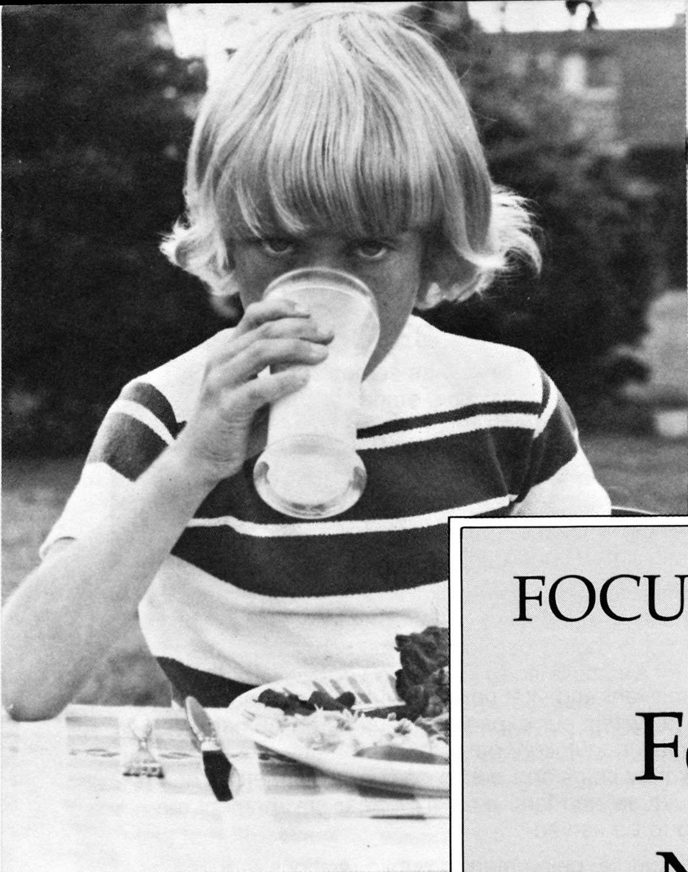
Do take time to reflect on how your public relations is advancing home economics. Let those that you work with know what you are doing. Share information with the public. Get involved with local professional and community organizations. Help recruit young people with ability into the profession. Don't reject as impolite the tooting of your own horn. Here's a little salesmanship verse for us all:

He who whispers down a well
About the goods he has to sell
Will never make as many dollars
As he who climbs a tree and hollers.

Let me assure you that CHEA values highly your contribution to this most important aspect of our association's life. Are there "helps" that you need from the association to make this public relations role of yours more productive? Let us know. Please use our brochures. New materials can be developed on request. Call on our committees. Good luck to you in telling the world about **home economics.**•

PRESIDENT'S MESSAGE

Elizabeth Feniak



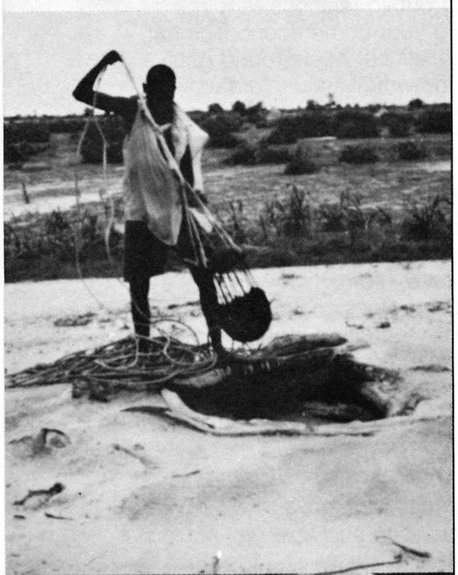
FOCUS ON

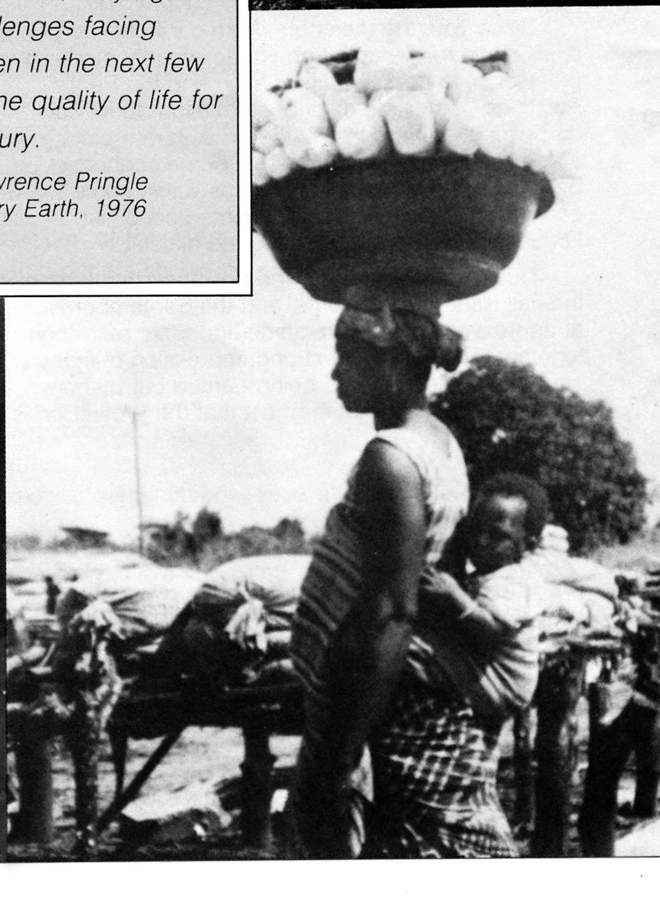
Food and Nutrition

The theme for the 1980 issues of CHE Journal is the "Conserver Society".

Although food experts may argue about the exact dimensions of the world food problem, they agree that it is one of the greatest challenges facing humankind, and that actions taken in the next few years will have a vital effect on the quality of life for all people in the twenty-first century.

Lawrence Pringle
Our Hungry Earth, 1976





Expectations Limitless: Earth Finite

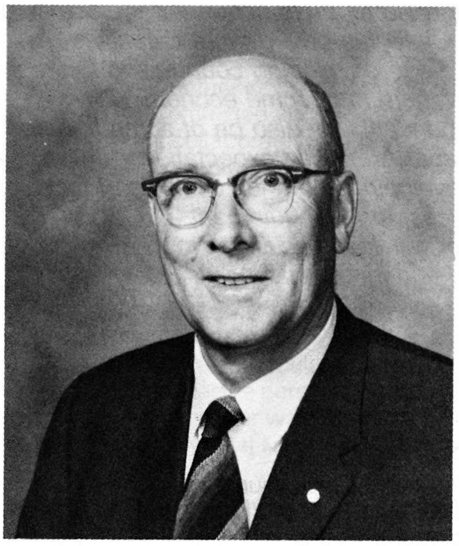
Dr. C.F. Bentley
Guest Editor

We have been living in possibly the most exciting time in human history. The science of nutrition, the improved quantity, quality, variety and reliability of food, as well as the intensive monitoring of its handling, preservation and sale, together with modern health sciences have extended life expectancies dramatically during the 20th century. Improved levels of education, increased outputs per worker, expanding urbanization and industrialization in combination have made available to ordinary people an undreamed of quantity and variety of consumer goodies, simultaneously increasing leisure time to enjoy them. We have travel opportunities that Queen Victoria could not have commanded. Truly, we have been and are very fortunate indeed. Yet we hope for more.

Although human expectations seem limitless, the earth is finite. Expanding population axiomatically increases food requirements and, science-fiction notwithstanding, synthetic foods will not replace conventional ones to any significant extent in the next few decades. Even if attractive, healthful, preferred foods could be "manufactured" (something not generally possible now) energy requirements for their manufacture, and so their costliness would be prohibitive. Therefore, in a finite world the amount and productivity of lands suitable for food production as well as the total demand for food on a global basis should be fundamental concerns of an enlightened citizenry. Unfortunately too few Canadians are interested in such problems. Thereby we risk our "good life."

We have become so urbanized that most Canadians are rather remote from our agricultural origins and the conserver philosophy which is an essential part of stable enduring stewardship of the land. We have forgotten that farmlands differ in quality and productivity, even within local districts. To the practical farmer this means that for similar amounts of production expenses low quality land produces less food than adjacent land of superior quality. Farmers know it costs more to produce a kilo of grain or a litre of milk on poor land than on nearby land of superior quality. Yet here in Canada we are removing forever from agricultural production some of our very best land.

Expanding cities and increasing population are gobbling up much of Canada's prime farmland. So far, soil scien-



tists and other Canadian agrologists have not been successful in persuading fellow citizens that unnecessary continuance of such prodigal misuse of our most important natural resource is seriously contrary to the welfare of current and future generations.

That is probably because the myth of Canada having vast areas of undeveloped land well suited for farming persists. Perhaps that myth can be laid to rest here by stating that on a net trade basis, all provinces in Canada except the three Prairie Provinces are now in a food deficit position: Quebec and British Columbia are about half food self-sufficient, the Atlantic provinces even less and Ontario, too, is in a deficit position. In spite of those somber facts only two Canadian provinces have reasonably effective legislation to conserve for continuing use as farmland most of our land resource well suited to agricultural production. If that unfortunate situation continues very much longer it is inevitable that for lack of reasonable conserver attitudes the cost of food in Canada, expressed as the percentage of disposable income spent for food, will rise.

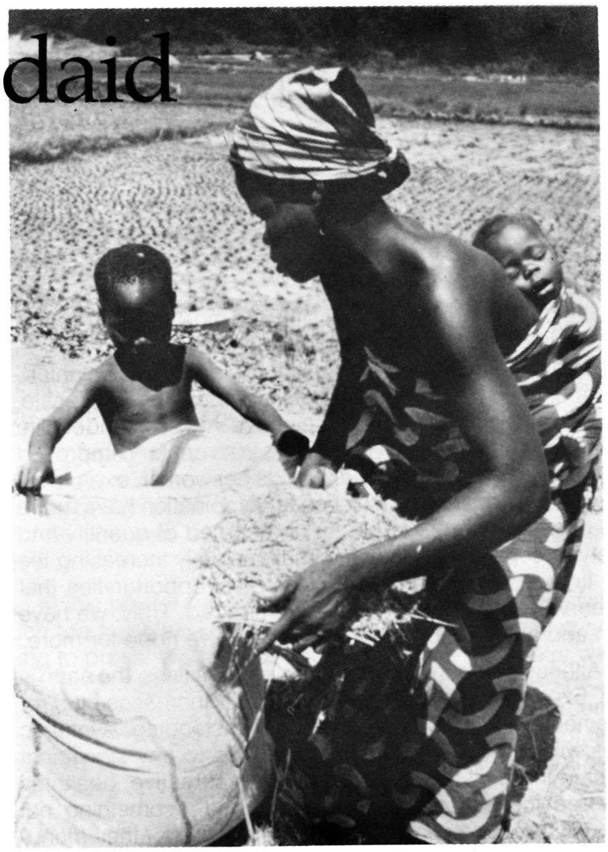
Canadian attitudes to population increase also reflect the lack of a conserver society attitude. Nationally we still hold with the tribal attitude that more people is axiomatically good, advantageous and genuinely desirable. Given the wealth of information available, the folly of such attitudes in contemporary times indicates a poorly informed citizenry more concerned with contemporary consumption than with conservation. Future generations too should be able to enjoy a good and secure life. As population in Canada continues to grow, the dependence of food deficit provinces on imported food

(Continued on page 9)

Dr. Fred Bentley, for ten years Dean of the Faculty of Agriculture, University of Alberta, is currently a professor of Soil Science at the University of Alberta. Being keenly interested in international development, he has been on International Technical Assistance work in Sri Lanka (formerly Ceylon), in Thailand, India, Kenya and Uganda. He was the first special adviser for agriculture in the Canadian International Development Agency. Since the inception of the International Development Research Centre, Dr. Bentley has been chairman of the Governing Board of the International Crops Research Institute for the Semi-Arid Tropics, which has its headquarters at Hyderabad, India. A member of more than ten professional societies and a fellow of several of them, he was president of the International Soil Science Society from 1974-1978.

The Value of Foodaid

G. P. Sevenhuysen



Courtesy of Canadian Hunger Foundation

During periods of slow economic growth foreign aid tends to come under close scrutiny. The Canadian government recently stressed that aid to developing countries in future should allow them to become economically independent, but also be of some benefit to Canada. Are these expectations realistic? Aid to developing countries consists of technical services, funds, equipment and food. This paper will limit discussion to the way foodaid is used and its effectiveness.

Types of Foodaid

By far the greatest volume of "foodaid" shipped is not intended for a specific purpose such as for example the feeding of young children, but is sold on the open market thus providing a source of income for the government. Only a small proportion, some 10%, is intended to support activities aimed at improving living conditions for specific groups of people. An even smaller amount of food is allocated for use in emergency situations. It should be remembered that every shipment of foodaid is at some stage requested by the recipient government.

Three criticisms levelled at foodaid are that it fosters dependence on donated food supplies, that it reduces the income of small rural farmers and that it leads to the introduction of inappropriate food habits. These criticisms have some basis of truth, but it is important to distinguish the type of foodaid that is being criticised: the influence of tons of wheat being sold on urban markets is much more likely to depress agricultural production than small volumes delivered to project participants as a supplementary food (Maxwell, 1978).

Emergency foodaid is usually quite separate from other foodaid shipments. The Red Cross and several bilateral agencies from European countries, for example, are able to respond relatively quickly to emergency situations, though shipping supplies can take several months. The United Nations is also able to provide food during emergencies through the World Food Programme (WFP), though the bulk of its assistance goes to longer term development projects. The speed with which the United Nations can organize emergency food shipments will greatly increase when the International Emergency Food Reserve is expanded (WFP, 1978 b). Emergency situations such as the droughts in Ethiopia and the Sahel region (1974-1975) have shown that foodaid can be of great value.

Sale of Foodaid

It makes little difference in practice whether the food donated to a country is sold by the central government to private companies or to government corporations. The food itself may be used by the food industry, distributed through ration shops (as in India) or appear in the local market at regular prices. In each case the money that the food represents improves the national balance of payments.

Building up government stocks of staple foods is an important use of foodaid. When enough food is available to be stored it can be sold at times of normal food shortage, for example before harvesting, which will allow the government to stop prices rising excessively and provide a measure of food security. Such action can significantly help the nutritional status of poorer urban groups.

However the provision of foodaid for sale can result in what is called an agricultural disincentive effect: the supplies of food donated reduce market prices and hence reduce farmers' incomes. As farmers stop growing the commodities on which they earn too little, usually staples such as cereals, production of these falls. Continued foodaid allows the government to ignore this dangerous imbalance in agricultural production which creates the opposite situation from the one intended: economic independence on donor countries (Nicholson & Esseks, 1978; Isenman & Singer, 1977).

Dr. G. P. Sevenhuysen is currently working at the University of Manitoba in the field of community nutrition. Previously employed as nutrition officer by the Food and Agriculture Organization of the UN, he worked also with the World Food Programme on nutritional aspects of foodaid. Dr. Sevenhuysen worked as nutritionist for four years in East and Southern Africa. He received two degrees in nutrition from the University of London.

Project Foodaid

It might be assumed that a major objective in donating food is to improve the diet of the recipients. In practice many projects have other aims that are not nutritional. For instance, institutional food can be substituted by foodaid and the resulting savings invested in the institution. Donated rice, oil, beans and canned meat given to children as a cooked school lunch will allow the school to save money which can be used instead to buy desks, repair buildings or dig new waterwells.

Building roads or constructing canals takes much labour and using, for example, a 500 g daily ration of wheat as part payment of wages will save money that can go toward equipment or cash wages. Where farmers resettle on as yet unproductive land, it will take two or three years before they achieve normal yields. In the meanwhile foodaid can tide the family over the period when no home grown food is available. In both these latter examples, rations must take account of the nutritional needs of the family as a whole. The market thus may receive five or six times the basic ration.

Considering the different uses of foodaid, the difficulties in identifying those at greatest risk of malnutrition and the problems of continuity of supply of foodaid, it is not surprising that comparatively little foodaid is used in development projects. The administration of foodaid intended for specialized projects is very complex compared to simple shipping operations. WFP for example deals with project based foodaid and employs some 600 staff whereas the EEC (European Economic Community) foodaid offices deal almost exclusively with economic foodaid and employ some 30 staff for similar volume of food shipped. This may also explain why so few measured evaluations of the impact of foodaid are available, since adequate project evaluations would require yet larger amounts of money to be spent on specialists, office staff and field studies rather than on commodities.

Canal Building in Bangladesh

Cost of Foodaid

In 1975 the total cost of the PL 480 program of the US was in the order of $312 million. Of this total $75 million was allocated to preschool projects and the feeding of preschoolers and mothers (HIID, 1978). The resources of the WFP programme have increased considerably over recent years and Canada's contribution is proportionately much greater now than when the programme was first started (Table 1) (FAO, 1973; WFP, 1978). Canada's contribution to WFP per capita of the population is significantly greater than that of other countries (Table 2) (WFP, 1978). Though this does not mean that Canada contributes more total foodaid, it does show Canada makes greater use of the WFP food distribution system. The Canadian government will therefore, have great interest in the efficiency and impact of WFP operations. Tables 1 and 2 also show that the U.S. ships more foodaid direct to developing countries than through WFP. The Netherlands also ships more of its foodaid bilaterally or through the EEC, and approximately 30% goes through WFP (Den Hartog & Damen, 1979).

Delivering foodaid not only requires administrative offices, transport facilities, and storage facilities, but also cash for purchasing project equipment and other investments which must be budgeted for. Few countries have enough additional funds to support projects adequately and cash contributions are an important part of foodaid assistance. It is unfortunate that WFP does not have enough cash to support all projects adequately (WFP, 1978a).

Table 1
World Food Program Foodaid Pledges
(Total Value — US $Millions)

	Value	Canadian % Contribution
1963 - 65	85	7
1966 - 68	189	15
1969 - 70	283	11
1971 - 72	249	12
1973 - 74	262	13
1977 - 78	750	25
1979 - 80	950	25

Table 2
World Food Program Foodaid Pledges
(US $Millions)

Country	1979 - 80 Value	(%)	1977 - 78 Value	(%)
USA	220.0	32	188.0	26
Canada	169.6	25	176.5	25
Saudi Arabia*	55.0	8	50.0	7
Netherlands	47.7	7	40.8	6
Norway	34.6	5	48.1	7
Denmark	37.5	5	28.2	4
Germany, Federal Republic of	36.6	5	29.1	4
EEC	—	—	75.9	11

* Cash only.

Effects of Foodaid

Studies dealing with the economic effects of foodaid conclude that generalizations about the negative effects of foodaid recorded in specific circumstances are not justified and that positive experiences can be pointed to (Griffin, 1979;

Maxwell, 1978). One of the exceptions being the political use of foodaid as documented in the case of Bangladesh (McHenry & Bird, 1977). From the nutritionist point of view the effect of foodaid programmes on the nutritional status of beneficiaries is at least as important. Particularly for those projects that provide rations for infants and young children.

The number of studies estimating the nutritional impact of foodaid in individual projects are few (MIID, 1978; Maxwell, 1978). Most studies have been paid for and published by agencies like CARE and USAID and logically deal with the nutritional status of recipients such as young children for whom an adequate diet and safe nutrition is important. Considering the many factors that influence the nutritional status of young children it is often difficult to accurately attribute any changes to foodaid alone. Where such studies have been done, methodologies vary considerably. A recent review by the author of selected studies shows that not all of them investigated groups of people who did not have access to foodaid with which to compare those who did. Neither was baseline data used in all cases. Conclusions from some of the studies are therefore often optimistic. A recent author demonstrated that all evaluation studies should take account of the nutritional status of these children that drop out of the foodaid project (Maxwell, 1979).

Table 3
Nutritional Impact of Selected Projects
(No. of Projects)

	Eval. Type	Anthrop. Meas. Pos.	Anthrop. Meas. No Change	Mortality Under 5 yrs. Pos.
Take Home Food Suppl.	A	1	3	1
	B	1	2	—
	C	2	1	—
	D	1	—	1
On the Spot Feeding	A	1	1	—
	B	2	1	1
	C	1	—	—

Evaluation Type:

A before and after measurements with control groups
B only after measurements with control groups
C before and after measurements without control groups.

Table 3 summarizes the results of several evaluation studies that dealt with the nutritional impact of either take-home rations or rations cooked and eaten in a central distribution point. Results regarding physical growth are not uniformly positive, though child mortality improved in each case where it was estimated. This somewhat patchy experience is confirmed by other reviews (MIID, 1978). The consensus is however that on the spot feeding is of greater benefit than take-home feeding. Food intended for young children or pregnant women is often shared with other family members whose nutritional needs are less urgent. This leaves too little of the ration for the intended beneficiaries to measurably affect growth or rate of weight gain. Maxwell (1978) concludes his foodaid analysis with the opinion that supplementary feeding of children is less effective in influencing the nutritional status of the community than other uses such as the part payment of laborer's wages which provides in many cases a true family income supplement. For families spending 50% or more of their income on food, donations of staples, and vegetable oil are an important contribution to the family's budget. Foodaid genuinely increases the income of poor groups of the population in such cases.

Investigators often mention conditions peculiar to a situation studied to explain why no impact of foodaid was recorded on the nutritional status of recipients. Unfortunately the influence of factors mentioned in this way is rarely known. If, for example, an author shows that children received only half the ration considered necessary to supplement their existing diet, can one expect the foodaid to have an effect on nutritional status? In what way does the effect differ from the situation where the children get a full ration during some weeks and none during others even though again by the end of the period they receive at least half of what was budgeted? The answers to these questions have not been tested in foodaid projects and can only partially be answered by present research in food energy utilization of children.

Apart from maintaining a continuous food supply in aid projects to ensure improvements in the nutritional status of beneficiaries, a continuous supply is equally important for the continuity of the project itself. If, for example, food is used as the part payment of wages a few months break in the supply of food used as part payment of wages will result in workers leaving the construction site with all the delays that this entails in getting work started again when supplies return.

Nutritionists at times mention that foodaid encourages inappropriate food habits. Take the example of wheat being provided to people who do not know the cereal and who have no cultural knowledge of cooking or preparing it — to distribute it direct, means that very little of it will be eaten. In attempting to find some use for the wheat it is often the baking industry that benefits, supplying well-situated urban groups with bread. Bread is a convenience food in the sense that it can be eaten without further cooking, is made palatable with very few additional food ingredients, can be eaten at work and so on. The habit of eating bread develops and when, through changing agricultural policies or poor harvests, no further wheat shipments are included in the foodaid package, the government finds itself with a new consumer demand that can only be satisfied through expensive imports. Similar analyses can be made for commodities such as milk and biscuits. The implications such developments have for increasing markets of industrialized countries has been an important argument against foodaid (George, 1976).

Imports of dried skimmed milk (DSM) highlight the cases where nutritional problems worsen because of foodaid. Until two years ago only a very small proportion of the thousands of tons of DSM being shipped to developing countries had been fortified with Vitamin A. Research showed that giving children with low vitamin A stores, such high protein supplements as DSM, could lead to irreversible eye damage if no vitamin A was supplemented at the same time (Dustin, 1976). Most shipments are now presumed to be fortified, but other problems continue. A more common occurrence, and certainly no less serious, is the substitution of breastmilk that the provision of DSM fosters, with all the infant deaths, damage from malnutrition and infectious disease that implies. Diluting the milk too much and using contaminated water are the main problems arising from artificial feeding in developing countries. The seriousness of this practice has been well publicized in recent years by, War on Want, Oxfam and other organiza-

tions. Through their pressure several large multinationals have had to acknowledge the contribution their marketing of baby milks in underdeveloped countries made to infant mortality and governments have had to change information being given to mothers on infant feeding in foodaid and other projects.

The Future of Foodaid

Economic and political interests that have contributed to large increases in foodaid shipments over recent years will also determine what happens next. Farmers in developed countries have found foodaid one way in which to develop new market potential for their products. Aid agencies can always justify additional shipments since even present levels of foodaid fall short of demand by a large margin. Donor governments, are able to use up agricultural surplus production in a convenient way. Recipient governments are able to provide their electorate with clear evidence of their commitment to improve living conditions. These interests are not likely to change much in the near future and suggestions to overcome the disadvantages of foodaid must be made in this context.

Maxwell and Singer (1979) list seven guidelines for the use of future foodaid but introduce the list by mentioning the overriding need for evaluating the effects of foodaid. Among the guidelines, several are also mentioned by other authors: (1) foodaid should be used to support of the poorest groups and improve national food production, (2) foodaid distribution should make as much use of locally produced food as possible, and (3) cash should accompany food that is used in economic development projects for equipment purchases and other investment. Griffin (1979) also mentions that providing foodaid to areas with the greatest population density as well as greatest need was an important factor in the effect of foodaid in Peru.

The conclusion reached by many authors is not a new one: foodaid should support economic development and local food production in particular. What is new is the suggestion that this should be achieved without the aid contributing to existing differences in income between social groups and make more use of local foods by exchanging imports for local stocks or stocks in neighbouring countries. Attention paid by the governments of donor countries to using foodaid in improving the situation of poor population groups is important in reducing the numbers of malnourished people. The interests of Canadian farmers and of the government do not run counter to such proposals. They do however imply that the choices of which countries and what activities to support with foodaid will need to be based on economic realities and potential for social change in receiving countries, rather than purely monetary criteria of the government of Canada.●

REFERENCES

Den Hartog, A.P. & Damen, P.J. Voedselhulp programmas en voeding. *Voeding*, 1979, *40*(3), 140-147.

Food and Agricultural Organization. Ten years of world food programme development aid: 1963-72. Rome: Author, 1973.

Griffin, P. The impact of foodaid-Peru a case study. *Food Policy*, February 1979, 46-52.

Isenman, P.J. & Singer, H.W. Foodaid: Disincentive effects and their policy implications. *Economic Development and Cultural Change*, January 1977, 205-237.

Maxwell, S. Foodaid for supplementary feeding programmes: A analysis. *Food Policy*, November 1978, 289-298.

Maxwell, S. Tracing feeding programme dropouts. *Food Policy*, February 1979, 52-53.

Maxwell, S.J. & Singer H.W. Foodaid to developing countries: A survey. *World Development*, March 1979, 255-246.

McHenry, D.F. & Bird, K. Food Bungle in Bangladesh. *Foreign Policy*, Summer 1977, 72-88.

Nicholson, N.K. & Esseks, J.D. The politics of food-scarcities in developing countries. *International organization*, 1978, *32*(3), 679-719.

World Food Policy. Foodaid policies and programmes-vitamin enrichment of dried skim milk (WFP/CFA 2/7-C Add.1). Rome: Author, August, 1976.

World Food Policy. *Resources of the program: Report of the executive director* (WFP/CFA 6/4). Rome: Author, July 1978. (a)

World Food Policy. *Study on emergency food aid* (WFP/CFA 6/6). Rome: Author, September 1978. (b)

Expectations Limited: Earth Finite

(Continued from page 5)

will place them in an ever more vulnerable position. The destiny of areas not self-sufficient in food is, in part at least, controlled by others. Such dependence on external resources generate envy and anger as is now all too evident in Canada with respect to oil.

Canadian atittudes to the energy question also reflect our lack of reasonably conservatory attitudes. In the contemporary world energy self-sufficiency ranks next to food self-sufficiency in importance. Yet although Canada is only about 80 percent self-sufficient in oil, and the cost of oil imports is causing serious stagnation in our economy, we have so far resisted adoption of any reasonably effective measures to conserve energy. Incredible as it may sound, we provide gasoline to Canadian motorists at one-third to one-half the price charged to European motorists whose countries pay the same price as we do for imported oil. No wonder Canada has the highest per capita energy use of any country of comparable population — and the poorest record of any industrialized country for achievement in energy conservation during the 1970's.

That lack of a conserver attitude to energy in Canada has important implications for food production and food costs. Although only 3 percent of Canada's total energy use is for food production on farms, another 15 percent of our total energy use is for the transportation, processing, storage and cooking of foods. Thus, failure to be effective in conserving energy use will increase its cost, and will therefore inevitably increase the cost of producing and preparing food.

A sense of stewardship is an attitudinal requirement for maintenance or enhancing the productivity of farmed lands. A conserver society holds and encourages such an attitude. Currently the percent of disposable income spent by Canadians on food is one of the lowest in the world; that happy circumstance is a major keystone to the good life we enjoy. But to maintain that favorable situation we must as a nation soon accept and implement conserver policies and attitudes in our use of agricultural lands and of energy.

Are we going to spoil or lose "the good life" because we refuse to become a conserver society? Home economists should have a role in deciding Canadian directions in these matters. So far their contributions to such dialogues have been negligible.●

Nutrition and Vegetarianism*

Summary

Vegetarianism is not new, having begun during biblical times. However, a large part of the present-day vegetarian movement is composed of young adults who adopt this dietary pattern for a variety of reasons. The so-called "new vegetarians" comprise several diverse groups differing from one another in their extremes of food avoidances and their affiliation with vegetarian-oriented groups. Many of the new vegetarians have joined one of numerous religious cults, each having diet-related taboos. Knowledge of the characteristics of traditional and new vegetarians provides clues to their nutrition status, and can help identify those at high risk for developing nutrition deficiencies. Very strict vegetarian or "vegan" diets pose potential hazards to one's nutrition status and general health, particularly for infants and young children. Vegetarian diets can be nutritionlly adequate if carefully selected. This process requires a very good knowledge of food composition and nutrition principles. As vegetarian diets become less restrictive as to nutrient sources, probability of meeting nutritional requirements increases. For those who wish to follow a vegetarian diet, the lacto- or lacto-ovovegetarian approach is recommended in order to ensure the intake of nutrients most likely to be of marginal content in diets based primarily on plants.

Résumé

Le végétarisme n'est rien de nouveau, il date de l'époque biblique. Cependant, une grande partie du mouvement végétarien actuel se compose de jeunes adultes qui adoptent ce mode d'alimentation pour différentes raisons. Les nommés "nouveaux végétariens" comprennent plusieurs groupes qui diffèrent les uns des autres par leurs tendances extrémistes à éviter certains aliments et leur affiliation à des groupes d'orientation végétarienne. Beaucoup de nouveaux végétariens se sont joints à l'un des nombreux cultes religieux qui ont tous des tabous concernant le régime alimentaire. La connaissance des caractéristiques des végétariens traditionnels et des nouveaux végétariens fournit des indications concernant leur statut nutritif, et peut aider à identifier chez ceux-ci un risque élevé de développer des déficiences nutritives. Les régimes végétariens ou "vegan" très stricts présentent des risques potentiels pour le statut nutritif et l'état général de l'individu, en particulier chez les bébés et les jeunes enfants. Les régimes végétariens peuvent avoir une valeur nutritive s'ils sont choisis avec soin. Ceci implique une très bonne connaissance de la composition des aliments et des principes nutritifs. A mesure que les régimes végétariens deviennent moins restrictifs quant à leurs sources nutritives, la probabilité de satisfaire les exigences nutritives augmente. Pour ceux qui désirent suivre un régime végétarien, une approche lacto- ou lacto-ovovégétarienne est recommandée de façon à garantir la consommation des éléments nutritifs qui n'existent vraisemblablement qu'en quantité marginale dans des régimes basés essentiellement sur les plantes.

* From *Dairy Council Digest*, National Dairy Council, Vol. 50, No. 1, Jan.-Feb., 1979. Copyright 1979 National Dairy Council. Reprinted by permission.

The increasing number of individuals, particularly young adults, who subscribe to vegetarianism has generated attention and concern from both the scientific and medical communities. This article examines forces motivating consumption of vegetarian diets as well as their impact on nutrition status and general health.

Why Vegetarianism?

The word "vegetarian" has referred to a person who abstains from the consumption of meat, fowl, and fish as food, with or without proscriptions on eggs and/or dairy foods (1). Vegetarian diets, far from having well-defined patterns, constitute individualistic regimes with diverse dietary patterns. Individuals who practice vegetarianism can be differentiated further according to the proscriptions of these dietary patterns. Thus, there are lacto-ovovegetarians who consume dairy foods and eggs in addition to foods of plant origin; lactovegetarians who consume dairy foods; fruitarians whose diets allow only raw or dried fruits and nuts, honey and/or olive oil; and vegan who proscribe all animal foods. Less common are the pescovegetarians and pollovegetarians who allow fish and poultry, respectively, in addition to plant foods, and who may or may not allow dairy foods and eggs.

Vegetarianism has never been without its advocates during any period of world history. Origins of vegetarian dietaries have been traced from biblical to contemporary times by several investigators (2-4). Historically, vegetarianism often has resulted from necessity brought about by a shortage of animal foods. However, voluntary vegetarianism in environments where animal foods are readily available is likewise not a new concept (1). Various religious and cultural arguments have dictated such a choice of dietary pattern by long-standing vegetarians. For example, Trappist Monks abstain from meat since they consider it a luxury and, thus, in conflict with their vow of simple living (3). Followers of Hinduism avoid meat because their religious belief in transmigration of souls bars them from distinguishing the murder of man from that

of a beast (5). The avoidance of meat by some Seventh Day Adventists (SDA) is, to them, an act of compassion and self-discipline (4).

These traditional vegetarians constitute only a small proportion of present-day vegetarian movements (3). Increasing markedly in number in recent years are the newest adherents of vegetarianism, mostly young adults who adopt it for a plethora of reasons (1). Often associated with the rise of the "health" or "natural" foods movement, modern vegetarianism is "new" not only in the sense of recency but also in the different forms it takes (1).

"New" vegetarians differ in dietary practices, attitudes, and social relations not only from the older or traditional vegetarian groups (e.g., SDA and Trappist Monks) but also among themselves. Far from being a homogeneous group, new vegetarians differ greatly in dietary patterns and related aspects of life styles (1,6). They comprise several diverse groups which Dwyer et al (6,7) differentiated according to their extensiveness of food avoidances, or affilitation with groups advocating vegetarian diets. Based on the strictness of their dietary proscriptions, subjects were classified as "circumscribed" or "far-reaching" (6,7). Circumscribed vegetarians avoided three or fewer classes of animal foods out of five possible classes (meat, poultry, fish and seafoods, eggs, and dairy foods). Non-animal food avoidances were confined to abstinence only from particular food items or what subjects believed to be "processed" and/or "non-organic" foods. Far-reaching vegetarians avoided four or five classes of animal foods and/or had extensive non-animal food avoidance patterns.

With respect to affiliation with voluntary associations having a vegetarian focus, new vegetarians were classified either as "joiners" or "loners" (6,7). Joiners, or group-affiliated subjects, followed precepts involving emphasis on macrobiotics (adoption of rigid dietary practices), raw foods, yoga, and health foods. Loners were unaffiliated with such groups and they had anti-slaughter and other idiosyncratic convictions.

A wide variety of differing motivations have prompted young adults to adopt the newer vegetarian diets, health concerns being the most frequently mentioned response (6). Additionally, ethical, metaphysical, ecological, economic, political, and food preferences are reasons mentioned (6-8). But the seemingly unrelated new vegetarians are thought to be connected by one common thread: a belief that they can purify their bodies and souls through a new religion and a life style whose essential element is vegetarianism (8).

Because many new vegetarians have joined one of the new religious cults, each having its own diet-related and other taboos (8), it is important to describe briefly a few of these.

Strong belief in some supernatural force guiding the group along to psychic tranquility seems to bind these various cults (9). None has been more devoted to this deeply religious idea than the once very popular Zen Macrobiotic movement of the 1960's. Interest and involvement in this movement has declined with the death of its founder, George Ohsawa. Macrobiotics was defined as the path of longevity and peace of mind through belief in Zen and adoption of rigid dietary practices (9). Utilizing the ancient Oriental dualism of "Yin" and "Yang", this movement encouraged its followers to move through ten dietary stages from an omnivorous to a vegetarian diet and then to progress further to a diet based on fewer and fewer foods until reaching the ultimate diet of only brown rice (9).

Other counterculture movements also have been described (9,10). The Messiah Crusade, better known as The One World Family Commune, is a religious sect professing to be in contact with the "Galactic Command" and concerns itself with a "balance of positive and negative forces." More socially oriented than most of the other vegetarian cults, it attempts to simulate drug euphoria and to create a healthy body state. While meat, eggs, and dairy foods are discouraged by this movement, those who continue to include them in the diet suffer no stigma.

Yoga followers advocate vegetarianism with the justification that meat is so near decomposition that the toxic burden placed on the body results in uremia. Eating meat also is contrary to the yoga belief that every person or animate thing experiences reincarnation. However, yoga followers are a very diverse group. While some follow diets which generally tend to be fruitarian, others consume eggs and dairy foods, especially fermented dairy foods.

From the Mideast comes a sect of Islam called the Order of Sufi which is an esoteric school whose beliefs derive from a blending of several religious traditions. Their vegetarian diets are highly individualistic and resemble those of the yoga disciples.

The New Vrindaban International Society for Krishna Consciousness, originating from India, is perhaps the most demanding of all cults in its orthodoxy, and is most divorced from the Western way of life. Membership is open to those who will obey the religion's four rules: no meat eating, no gambling, no intoxication, and no sex outside of marriage. It allows only "Prasadam" or spiritual food including a large variety of fruits, vegetables, and milk, that has been blessed in the temple.

The Ehrets Mucusless Diet Healing System requires its followers to live on a diet that is made up largely of fruit, with the idea of producing as little mucus as possible. The group is rigidly vegetarian because of the belief that meat produces mucus, the breeding ground for disease.

A rather extreme variation of vegetarianism which originated in England has found its way into the American way of life in the 1960's. Termed "veganism" or the philosophy and practice of compassionate living, it is based on the concepts of reverence of life and of non-killing and non-injuring (9). The American Vegan Society is composed of very health-oriented individuals who avoid killing and harming animals supposedly as a means for maintaining one's physical, emotional, mental, and spiritual health and well being. Veganism is quite extreme in that animal products such as wool, silk, leather, fur, pearls, soaps or cosmetics with animal oil or fats, brushes made of hair, etc., are avoided.

Nutrition Implications

Knowledge of the characteristics of traditional and new vegetarians can aid in assessing their nutrition status and in identifying those in particularly high risk for nutrition inadequacy. Because vegetarianism at the present time appears to embrace a wide spectrum of dietary patterns, there are very different consequent variations in the risk of possible nutrition inadequacy.

Adoption of restrictive diets, mostly by new vegetarians, without considering their nutrition limitations, has created a new set of dietary problems that poses potential hazards to one's general health. The new vegetarians present socially and culturally — rather than

economically and medically — determined diet-related problems which challenge the nutrition scientist. For example, the diet does not result usually from lack of availability of proper food (as in the case of some traditional vegetarians) or of the money with which to buy food. It results from the individual's deliberate elimination of certain foods from one's diet for whatever philosophical or ideological reasons one chooses.

What are the characteristics of restrictive or ill-planned vegetarian diets that may compromise nutrition adequacy? First, most vegetarian diets tend to be high in bulk; therefore, meeting caloric needs, particularly of young children, may be difficult (11).

"Adoption of restrictive diets, mostly by new vegetarians, without considering their nutrition limitations, has created a new set of dietary problems that poses potential hazards to one's general health."

Second, diminished caloric intake may result in inefficient protein use as an energy source; recommended protein intake thus may become marginal (12). While the quantity of protein is of central concern in vegetarian diets, protein quality becomes of concern if sources of very low biological value are used. In some instances, only grains — especially of only one kind — or no legume, nut, or seed proteins are included in the diet (13,14). Animal and vegetable proteins differ in quality; that is, in the kinds and amounts of amino acids they contain. In general, animal proteins are of higher quality than plant proteins. To perform its unqiue function of building and maintaining muscle and tissue, protein must be of high quality; that is, it must contain all the indispensable amino acids in the proper amounts and proportions(13).

There are several ways of improving the protein nutriture of vegetarians (12). First, protein intake may be increased by combining animal protein with cereal and vegetable proteins; for example, cereal with milk or macaroni with cheese. Second, the quantity of protein in the diet can be increased by using legumes in which the protein concentration is high (for example, soybeans, chickpeas). Third, the quality of vegetable proteins can be improved by combining in each meal vegetable protein foods that complement one another and, thus, provide indispensable amino acids in adequate amounts. Lappe (15) has provided a step-by-step approach to the art of complementary protein cooking.

But while an all-vegetable diet, particularly rich in soybeans and other beans, can be developed to provide adequate protein for an adult, the situation may be less favorable with young children. Beans are not digested well by young children and do not have a biological quality comparable to the protein of meat, milk, eggs, poultry, or fish; thus, they are not a completely adequate substitute for animal protein (5,16). Robson et al (17) expressed concern about *Kokoh,* a macrobiotic infant cereal which, when used in dilutions recommended, poses difficulty in meeting energy and protein requirements. On the other hand, Vyhmeister and her coworkers (16) concluded that it is unlikely for an infant or young child to develop protein deficiency if adequate calories from various sources are fed along with the recommended level of protein.

In addition to possible inadequacies in calories and proteins, other nutrients are likely to be of marginal content in vegetarian diets depending on the extent of dietary restrictions. Trahms and Feeney (18) found that pre-school children whose diets excluded all animal products (vegans) consumed significantly less total protein, fat, calcium, and riboflavin that vegetarians and nonvegetarians who consumed animal protein. Using ten-day dietary records, Brown and Bergan (19) found the nutrient intakes of 50 well-educated young adults who were Zen Macrobiotic followers to be limited in calories, calcium, and riboflavin as well as in iron among the women.

Strict vegetarian diets tend to be low in calcium and riboflavin unless some forms of dairy foods are included in the diet (20). Dairy foods are the major dietary sources of calcium and riboflavin. Data assembled by USDA reveal that in 1978 dairy foods, excluding butter, supplied 75% and 39% of the calcium and riboflavin, respectively, available for U.S. civilian consumption (21).

To provide the Recommended Dietary Allowance for calcium, strict vegetarian diets may be either too bulky or excessive in energy content. While certain coarse, leafy, green vegetables may be particularly high in calcium content, absorption of calcium from these sources may be impeded depending on the fiber content. There is the concern that a high fiber content will interfere with the absorption of calcium and other minerals. Several investigators (22-25) have reported findings that support a metal-binding action of certain types of dietary fiber as being at least partly responsible for interference with absorption of zinc, calcium, phosphorus, and possibly iron. In addition, some vegetables contain oxalic acid which combines with calcium during digestion to form calcium oxalate which is not readily absorbed but rather excreted in the feces (26). The calcium from grain products may not be readily available either because of their content of phytates which also interferes with calcium absorption (26). It must be added, however, that phytates, like oxalic acid, are not likely to interfere with overall calcium utilization under normal dietary conditions where their concentration in the diet is low relative to the amount of calcium present.

Albanese et al (26) have developed a table of calcium equivalents containing quantities of various foods needed to supply the same amount of calcium in one cup of milk. It illustrates the difficulty of obtaining sufficient calcium from traditional foods without dairy foods.

"Strict vegetarian diets tend to be low in calcium and riboflavin unless some forms of dairy foods are included in the diet. Dairy foods are the major dietary sources."

The problem of inadequate dietary calcium can be compounded by a lack of vitamin D which is indispensable for optimal calcium absorption and utilization (5). Dwyer et al (27) found macrobiotic vegetarian children to be at particular risk of compromised vitamin D nutriture in comparison to other vegetarian children. Vitamin D occurs naturally in only a few foods, almost universally of animal origin, such as egg yolk, butter, liver, and some species of fish. However, certain foods have been fortified with this vitamin; vitamin D milk is the major dietary source of vitamin D in the American diet. Because vitamin D also is formed by the action of sunlight on the skin, potential deficiency of this vitamin

among vegetarians is limited to those who not only eliminate the food sources of this vitamin but also to those who for any reason are not exposed to sunlight.

Because vitamin B_{12} is found almost exclusively in foods of animal origin, a completely vegetarian or vegan diet would lead to an inadequate vitamin B_{12} intake unless a vitamin supplement is taken (5,20,28-31). Surprisingly, however, studies of vegans rarely show any overt signs and symptoms of deficiency of this vitamin. Those who do develop clinical abnormalities have dietary inadequacies complicated by coexisting disorders such as malabsorption (32).

The paradoxical observation has been attributed to several factors (30,31). First, length of time on the vegetarian diet is important as normal vitamin B_{12} stores in the omnivores are 3 to 5 mg, amounts exceeding by at least a thousandfold the Recommended Dietary Allowance of 3 μg/day for adolescents and adults (33). These reserves are sufficient to maintain adequate serum levels of this vitamin for up to five years. Second, the range of serum vitamin B_{12} levels associated with deficiency is wide and the length of time individuals can maintain normal hemopoiesis and neurological function at low serum vitamin B_{12} levels also is variable. There is a need to study the effects of long-term vitamin B_{12} deficiency on nutrition status of strict vegetarians, particularly when clinical abnormalities may coexist.

Women on vegetarian diets, particularly during their child-bearing years, may have difficulties in obtaining adequate iron on a diet without meat or eggs (5,29). Strict vegetarians also deprive themselves of certain rich sources of iodine, such as marine fish and shellfish (5). Plant foods grown in soils away from the seacoast sometimes are very low in iodine (29). This mineral deficiency, however, is easily eliminated by use of iodized salt (5).

Probably no cult was more known to produce malnutrition among its followers than the Zen Macrobiotic movement. Macrobiotic adherents, particularly infants and children, seemed to exhibit a combination of all nutrition afflictions one may see in the other vegetarian-associated cults (8,9). Deaths due to extreme malnutrition attributed to the Zen Macrobiotic diet prompted the Council on Foods and Nutrition, American Medical Association, to warn physicians and to declare that Zen Macrobiotics has created among its converts a major health problem by inducing scurvy, hypoproteinemia, anemia, hypocalcemia, and emaciation or starvation with accompanying loss of kidney function (34).

It becomes obvious then that in order to decrease or eliminate risk of nutrition inadequacy, vegetarian diets should contain a variety of foods including dairy foods and eggs. Smith (35) has developed guidelines to help plan nutritionally adequate vegetarian diets. Robertson et al (36) have written a basic reference manual which provides sound nutrition principles as basis for planning nutritionally adequate diets based primarily on plants.

"The most alarming effect of adherence to vegetarian diets may be the false feeling of security given followers."

Health Implications

Growth

The effects of strict vegetarian diets on growth have been of major concern particularly during early stages of life when most severe deviations from norms and deficiency symptoms seem to occur. Young children on vegan diets have been reported to grow at rates below norms (37). Dwyer et al (38) compared anthropometric measurements of vegetarian preschoolers with established norms. The majority of the children's measurements were below the Harvard 50th percentiles for length and weight at six months of age, although head circumferences were similar to standards and within normal limits at all ages.

Growth velocities (weight and length) of vegetarian children under two years of age were reported to be depressed, while among those over the age of two years, growth velocities were generally comparable to Harvard norms (39). Thus, if intervention efforts to maintain growth velocities within norms are to be undertaken, they should begin during the first year of a vegetarian child's life as this is when deviations seem to occur.

Health and Disease

To the health professional, the most alarming effect of adherence to vegetarian diets may be the false feeling of security given followers. That is, vegetarianism is sometimes mistakenly regarded as a panacea for preventing, mitigating, or curing disease and, thus, most probably keeping believers away from necessary medical care (4,9).

Several hypotheses have been advanced relating the influence of diet with striking differences in disease rates, particularly those for coronary heart disease (CHD) (40-43) and colon cancer (44-49). These hypotheses are still the subject of controversy in the scientific community since much of the data supporting any of these contentions have been epidemiological in nature. Moreover, data contradictory to these associations also are available (50-60).

Nevertheless, these hypotheses have influenced the adoption by some of vegetarian diets with the hope of improved quality of life and overall health (61-66). The aspect or aspects of vegetarian diets that may contribute toward such a positive effect, however, has not been identified. This task is of particular difficulty because often-times new vegetarians also change their life styles when they elect to follow vegetarianism. Thus, whether any positive health benefit stems from adoption of a vegetarian dietary and/or from the change in life style is a priority warranting further research.

Certain populations have unique life styles and distinct behavioral characteristics that make them particularly fruitful study populations for elucidating the role of dietary factors and other life style variables in either promoting or preventing disease processes (67). For example, interest in studying cancer occurrence among Seventh Day Adventists (SDA) was generated not only because they are a nonsmoking and nondrinking population by church proscription but also because of their unique diet whose principle feature is lacto-ovovegetarianism. Existing data on cancer mortality among SDA reveal mortality rates that are 50 to 70% of the general population rates for most cancer sites that are unrelated to smoking and drinking (67). Phillips (67) suggested that the lacto-ovovegetarian diet, which is followed by approximately 50% of the SDA population, may protect against colon cancer possibly through its influence on the functioning of the immunological system. While evidence is scanty, this possibility is attractive because of the rather general decrease in cancer mortality from almost all cancer sites in SDA, suggestive of a stronger defense system against cancer than lack of exposure to a few known multiple

environmental carcinogens.

Phillips and his co-workers (68) also reported on CHD mortality rates in California SDA compared to the general California population and on CHD mortality rates in subgroups of SDA with differing dietary habits. They observed that vegetarian/nonvegetarian status is strongly related to risk of CHD mortality in SDA males below age 65 but not in males over age 65 or females of any age. A rather unexpected finding showed that strict vegetarian females had the highest risk for CHD deaths, being not significantly different from that for the general population. Clearly, more research is warranted to account for these findings.

Another unique population is that of Utah, more than 70% of which are members of the Church of the Latter Day Saints (Mormons) (60). Utah has had an average age-adjusted total cancer mortality of 22% below, and a colon cancer mortality of 34% below, the U.S. average (60). Lyon et al (69) attributed this low cancer incidence in Utah to lower rates in the Mormon population. Because of the Mormon Church's counsel for moderation in, but not abstention from, the use of meats, Utah residents do not appear to adhere to a vegetarian diet. Thus, whether or not vegetarian diets are protective against colorectal cancer must be viewed as a subject warranting further research.

Research also must be continued and expanded in the area of identification of elements in vegetarian and nonvegetarian diets that may modify the metabolic ability of the colonic microflora toward providing protection against colorectal cancer (70-75).

Nutrition Adequacy

Vegetarianism per se is not reason for clinical and nutrition concern. It becomes critical depending on the extreme with which it is practiced and on the age at which it is implemented. The more restrictive vegetarian diets are relative to the type of foods they allow, the more difficult it is to meet nutrient needs. The greatest risk results from undue reliance on a single plant food source. Infants and children on restrictive vegetarian diets are of particular concern because they are more susceptible to develop clinical symptoms of nutrient deficiencies and slower rates of growth and development. The effects on mental development and function of nutrition deficiencies resulting from restrictive vegetarian diets imposed in early life are not clearly delineated and, thus, warrant further study. Also, while symptoms of calcium and vitamin D deficiencies may take years to be manifested in adults, children with such deficiencies become especially prone to rickets (8).

"The selection of plant foods necessary to provide the nutrients supplied by animal foods requires a superior knowledge of food composition and nutrition principles which many of the new vegetarians unfortunately do not have."

Nutritionists generally agree that vegetarian diets can be nutritionally adequate if sufficient care is taken in planning them (24). The selection of plant foods necessary to provide the nutrients supplied by animal foods requires a superior knowledge of food composition and nutrition principles which many of the new vegetarians unfortunately do not have. The expertise of a nutritionist is needed to develop nutritionally adequate dietary patterns using primarily foods of plant origin.

As vegetarian diets become less restrictive as to sources of nutrients, probability of their meeting individual nutrient requirements increases (24). Because dairy foods and eggs are excellent sources of the nutrients likely to be of marginal content in vegetarian diets, lacto-ovovegetarianism greatly reduces the risk of nutritional inadequacies (11,16,24). Following a lacto-ovovegetarian diet allows one to select a wide variety of foods from the basic food groups and, thus, more readily assures a nutritionally adequate meal pattern.

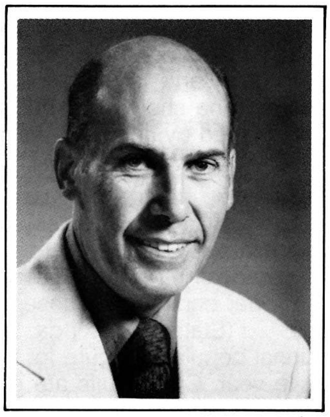
References

1. Dwyer, J.T., L.D.V.H. Mayer, R.F. Kandel, & J. Mayer. J. Am. Diet. Assoc. *62*:503, 1973.
2. Hardinge, M.G., & H. Crooks. J. Am. Diet. Assoc. *43*:545, 1963.
3. Majumder, S.K. Am. Sci. *60*:175, 1972.
4. Todhunter, E.N. World Rev. Nutr. Diet. *16*:286, 1973.
5. Mayer, J. Fam. Health *5*:32, Feb. 1973.
6. Dwyer, J.T., L.D.V.H. Mayer, K. Dowd, R.F. Kandel, & J. Mayer. J. Am. Diet. Assoc. *65*: 529, 1974.
7. Dwyer, J.T., R.F. Kandel, L.D.V.H. Mayer, & J. Mayer. J. Am. Diet. Assoc. *64*:376, 1974.
8. Erhard, D. Nutr. Today *8*:4, Nov.-Dec. 1973.
9. Erhard, D. Nutr. Today *9*:20, Jan.-Feb. 1974.
10. Erhard, D. J. Nutr. Ed. *2*:135, Spring 1971.
11. Hardinge, M.G., & H. Crooks. J. Am. Diet. Assoc. *45*:537, 1964.
12. Committee on Nutrition, American Academy of Pediatrics. Pediatrics *59*:460, 1977.
13. Scrimshaw, N.S., & V.R. Young. Sci. Am. *235*:51, Sept. 1976.
14. Register, U.D., & L.M. Sonnenberg. J. Am. Diet. Assoc. *62*:253, 1973.
15. Lappe, F.M. *Diet for a Small Planet.* Revised Ed. New York: Ballantine Books, 1975.
16. Vyhmeister, I.B., U.D. Register, and L.M. Sonneberg. Pediatr. Clin. North Am. *24*:203, 1977.
17. Robson, J.R.K., J.E. Konlande, F.A. Larkin, P.H. O'Connor, H.-Y. Liu. Pediatrics *53*:326, 1974.
18. Trahms, C.M., & M.C. Feeney, Fed. Proc. *33*:675, 1974.
19. Brown, P.T., & J.G. Bergan. J. Am. Diet. Assoc. *67*:455,1975.
20. Raper, N.R., & M.M. Hill. Nutr. Program News, July-Aug. 1973.
21. Marston, R., & L. Page. National Food Review *NFR-5*:28, Dec. 1978.
22. Harland, B.F., M. Peterson. J. Am. Diet. Assoc. *72*:259, 1978.
23. Reinhold, J.G., B. Fardji, P. Abadi, & F. Ismail-Beige. In: *Trace Elements in Human Health and Disease. Vol. 1 Zinc and Copper.* A.S. Prasad and D. Oberleas (Eds). New York: Academic Press, 1976, pp. 163-180.
24. Freeland, J.H., M.L. Ebangit, & P. Johnson. Fed. Proc.*37*:253, 1978.
25. Bodzy, P.W., J.H. Freeland, M.A. Eppright & A. Tyrel. Fed. Proc. *36*:1139, 1977.
26. Albanese, A.A., A.H. Edelson, E.J. Lorenze, E.H. Wein, & L.D. McBean. *Calcium Throughout the Life Cycle.* Rosemont, Illinois: National Dairy Council, 1978, pp. 38-39.
27. Dwyer, J.T., W. Dietz. G. Hass, & R. Susskind. Fed. Proc. *37*:333, 1978.
28. Food and Nutrition Board, Committee on Nutritional Misinformation. Am. J. Clin. Nutr. *27*:1095, 1974.
29. Anonymous. Nutr. Rev. *36*:243, 1978.
30. Ellis, F.R., & P. Mumford. Proc. Nutr. Soc. *26*:205, 1967.
31. Ellis, F.R., & V.M.E. Montegriffo. Am. J. Clin. Nutr. *23*:249, 1970.
32. Anonymous. Nutr. Rev. *36*:243, 1978.
33. Food and Nutrition Board, National Research Council. *Recommended Dietary Allowances.* Washington, D.C.: National Academy of Sciences, 1974, p. 77.
34. Council on Foods and Nutrition, American Medical Association. JAMA *218*:397, 1971.
35. Smith, E.B. J. Nutr. Ed. *7*:109, July-Sept. 1975.
36. Robertson, L., C. Flinders, & B. Godfrey. *Laurel's Kitchen. A Handbook for Vegetarian Cookery and Nutrition.* Berkeley, California: Nilgiri Press, 1976.
37. Anonymous. JAMA *228*:675, 1974.
38. Dwyer, J.T., R. Palombo, H. Thorne, I. Valadian, & R.B. Reed. J. Am. Diet. Assoc. *72*:264, 1978.
39. Shull, M.W., R.B. Reed, I. Valadian, R. Palombo, H. Thorne, & J.T. Dwyer. Pediatrics *60*:410, 1977.
40. Keys, A., J.T. Anderson, & F. Grande. Lancet *2*:959, 1957.

(Continued on page 20)

FOOD CONSUMPTION AND THE CONSERVER ETHIC

Trevor A. Watts



Résumé

Les types de consommation alimentaire de la période de 1950 à 1975 sont brievement examinés en ce qui concerne quelques denrées sélectionnées. Quelques uns des changements les plus récents concernant la disponibilité des aliments sont considérés, par exemple l'impact de la disponibilité des fruits et légumes d'un bout d'année à l'autre, et le changement en cours dans l'industrie alimentaire, dont les effets sont susceptibles d'influencer le coût de l'alimentation familiale et le pourcentage des revenus consacré à l'alimention. Des changements sont aussi survenus au niveau de la vente au détail en fonction du mélange de produits alimentaires et non alimentaires offerts dans les supermarchés, aussi bien que l'introduction d'autres alternatives pour l'achat de produits alimentaires, tels que les magasins "box".

Ces changements sont considérés dans leur relation avec l'éthique conservatrice ou le changement de conduite ou d'attitude qui a été qualifié par certains de "simplicité volontaire". Un des aspects de cette nouvelle conscience est l'actuelle concentration sur l'évaluation de l'énergie du système alimentaire, y compris la préparation des aliments à la maison.

Abstract

Food consumption patterns of the period 1950-1975 are briefly reviewed for selected commodities. Some of the more recent changes in availability of foods are considered, for example the impact of year-round availability of fruits and vegetables and evolving change in the food service industry, which may have an effect on family food costs and proportion of income spent on food. Changes have also occurred at the retail level in terms of the mix of food and non-food items available in supermarkets as well as introduction of alternative sources for grocery purchase, such as box stores.

These changes are considered in relation to the conserver ethic or the change in behavior or attitude that has been identified by some as "voluntary simplicity". One aspect of this new awareness is the current focus on energy assessment of the food system including preparation of food in home.

Food consumption patterns as well as retail sources of foods available to Canadians have altered over the past two to three decades. Some of these changes have had impact on the variety of food choice supplied; consumption resulting from imprudent food selection practices could have long range nutritional and health implications to the Canadian population. Compounding the changes in food supply and food choice behavior has been the generally rising cost of food during the past few years coupled with, on the part of some sectors of the population, a growing concern for the ecology and conservation of resources. The effects and implications of some of these factors will be explored briefly, recognizing that each could be a study in itself.

Although data for trend analysis of food consumption in Canada is available for only relatively recent decades, some of the trends of the past 25 years in apparent food consumption patterns are believed to have started to emerge during the early part of the century. One of these trends is the increasing proportion of meat relative to other foods consumed. A second significant trend is the increase in per capita consumption of visible fats and oils. Concurrent with these two upward trends in consumption is the generally declining trend in the proportion of cereal grains and

---

Dr. Trevor A. Watts, the author of this invited paper, is Associate Professor, Department of Consumer Studies, University of Guelph. He holds a Ph.D. degree from McGill University and a M.Sc. degree from the University of Manitoba. Dr. Watts had a lengthy management career in the Canadian food industry, particularly in the fields of marketing information services and product research and development, before joining the University of Guelph. He is a member of the Professional Marketing Research Society, the Canadian Institute of Food Science and Technology, and the Chemical Institute of Canada. He has authored or co-authored several publications and monographs.

other starch source commodities. In addition, changes in the mix of fresh and processed fruits and vegetables and dairy products have occurred. In more recent years, of course, the range of preprocessed and manufactured foods and food service availability has resulted in altered eating patterns.

Based on food disappearance* data reported by Statistics Canada, trends in food consumption patterns and their implications have been reviewed for the period 1950-1975 by Watts et al (1977). Apparent per capita consumption data is available for very few processed food products and only for recent years. However, some indication of changes in the mix of processed and manufactured products available and their growth can be inferred through evaluation of shipment data which is reported annually by Statistics Canada for selected product categories. Recognizing the limitations of both types of data, disappearance and shipment, a general assessment of shifting patterns of apparent food availability can be made for the national population. The more salient observations for selected groupings — meat and poultry, visible fats and oils, cereal grains, dairy products and fruits and vegetables — will be summarized.

Food Consumption Trends

Apparent consumption of red meats — beef, pork, veal and lamb — has increased by close to 27% comparing the five-year average per capita disappearance for the period 1971-1975 to that of 1950-1954. The increase has been primarily the result of increased consumption of beef. Apparent beef consumption in 1975 at 102 pounds per person per year was just over double that in 1950. Similarly, poultry has shown considerable growth in apparent per capita consumption over a 25 year period primarily from increased consumption of fowl and chicken. Turkey, although a minor component of total poultry, has nearly doubled in apparent consumption over the same period.

Visible fats and oils, comprising spreads, cooking fats and oils and salad oils, have shown a major increase in apparent per capita consumption. Significant factors affecting this increase are a nearly doubling in apparent consumption of shortening oils and a seven-fold increase in apparent consumption of salad oils comparing average per capita data for the period 1971-1975 to that of 1950-1954. Spreads, butter and margarine, have shown a decrease in total per capita apparent usage, although consumption of margarine has increased more or less steadily since the early 1950's. In 1976, apparent per capita consumption of margarine slightly exceeded that of butter.

Over a 25 year period there has been a generally declining per capita apparent consumption of total cereal grain products. The decline was most pronounced during the 1950's; this trend was reversed somewhat in recent years with a modest rise occurring particularly in apparent consumption of wheat flour which represented about 85% of all cereal grains consumed as food in 1975. It has been observed (Watts et al, 1977) that the decline in apparent consumption of wheat flour, not unsurprisingly, parallels a general decline in reported per capita consumption of bread through this same general time period.

Per capita consumption of dairy products in terms of total milk has declined over a 25 year period primarily as the result of a major and generally steady decrease in apparent consumption of fluid milk. On the other hand, more highly processed dairy products such as cheddar and processed cheese, cottage cheese and ice cream, have shown fluctuating but generally increasing patterns of growth in apparent consumption over this period of years.

Apparent per capita consumption of total fruit excluding tomatoes has increased about 12%, based on fresh fruit equivalent, comparing the average for the period 1971-1975 to that for the four-year period 1958-1961. This increase has, in large measure, been the result of a nearly 30% increase in the amount of fresh fruit processed to fruit juices, including both citrus juices and apple juice. Quantity of fruit apparently consumed as fresh fruit per capita has also increased over this period particularly during more recent years. Fruit processed to canned form shows a relatively static apparent per capita consumption, while apparent consumption of frozen fruit has increased over the past several years. The frozen form, however, represents only a relatively small proportion of total fruit disappearance.

Consumption of total vegetables, excluding tomatoes and potatoes, has shown an increase of 8.5%, on a fresh equivalent basis, comparing the average annual per capita disappearance for 1972-1975 to that of 1958-1961. This increase is in large part the result of an increase in apparent consumption of fresh vegetables particularly since 1974. Although per capita disappearance of vegetables processed by commercial freezing is considerably greater today than in the late 1950's, this form represents less than half of the apparent per capita consumption of vegetables processed by canning.

Importation of Fruits and Vegetables

The increased apparent consumption of fresh fruits and vegetables in recent years is probably in part due to increased availability of fresh produce year-round and generally improved distribution throughout Canada. Some of this greater availability is seasonally supplied by Canadian production but to a large extent is met by importation when domestically grown fresh produce is not available. In some cases, per capita production of Canadian fresh fruits and vegetables had declined or has not kept pace with increasing consumption and is unable to meet demand. The short-fall in supply is supplemented by imported produce.

This may, in part, be seen through examining importation data reported by Statistics Canada for selected fruits and vegetables (Statistics Canada, 32-336). Tonnage of imports has been converted to a per capita basis based on the reported (Statistics Canada, 91-201) national population figure for the respective year. Citrus fruits are excluded in that virtually all of those apparently consumed in Canada are imported. The annual per capita imports for each selected product have been averaged for two time periods, 1962-1966 and 1972-1976, and reported in Table 1. For comparison, the corresponding percentage change in per capita apparent consumption is included.

For most of these selected fruits and vegetables major increases in imports per capita have taken place over the decade. The exception is fresh grapes where virtually no change has occurred in quantity imported per person. For some fresh fruits and vegetables such as cherries, pears, strawberries, cucumbers and lettuce, part of the increase may be attributed to increasing per capita apparent consumption which may, at least in part, be attributed to greater year-round availability. In other cases, particularly fresh

For an elaboration of the term "disappearance" refer to Watts et al., 1977 in the reference list which accompanies this article.

tomatoes and corn, per capita consumption has apparently declined. This decrease may not represent a "real" decline in consumption in that Statistics Canada disappearance data does not account for availability of home-grown produce. The increase in imports per capita, however, must be attributed to an inability to supply demand through domestic production. Not only has an increase in per capita importation of fresh fruits and vegetables occurred in certain cases, but as can be seen canned peaches, pears and tomatoes and frozen strawberries also have shown considerable growth in imports per person.

Per capita consumption of fresh potatoes has not been examined in detail but appears to have fluctuated annually with no real trend apparent over the past 15-20 years. However, a shift toward greater availability of processed potato products is evident in recent years. An indication of this shift can be gained by comparing trends in statistics of manufacturers' shipment of frozen fresh fried potatoes and potato chips (Watts, 1979). Tonnage of frozen french fried potatoes shipped by Canadian processors in 1976 was 98.5% greater than that shipped in 1971 while population growth for the same period was 7.2%. Volume of potato chips shipped showed an increase of 38.2% comparing 1974 to 1972 followed by a decline of close to 22% in 1975.

Thus, not only have Canadians experienced a change in the mix of food products apparently consumed, but in some cases as with some fruits and vegetables, a change is also reflected in the origin of the products. If this change in volume of imports per capita is attributed to having fresh produce available out-of-season, there may be a major economic cost attached. Fresh fruits and vegetables have a relatively high transportation cost because of their perishability and generally long shipping distances to market. It has been estimated by the Retail Council of Canada (Imported . . . , 1979) that between 20 and 30% of the cost of fresh produce is represented by the cost of energy for transport. As fuel costs increase, a consequent rise in the cost of fresh produce can be expected, particularly for imported produce.

Food-Away-From-Home

Another major change that has occurred in consumption patterns is that of preparation and consumption of food away from home. Unfortunately, statistics are not available to indicate the per capita volume and type of food commodities consumed away from home. However, the dollars spent on food out of home as a percent of total food expenditure is reported by Statistics Canada. In 1976, based on eight urban centres, out of home eating represented 28.2% of total weekly family food expenditure and for the top quintile income group the proportion spent out of home was over 36% of total weekly family food expenditure (Statistics Canada, 62-545). The percentage of family expenditure for food out of home has continued to increase over the past 20 years. The patterns of growth and change for this sector of the food industry in Canada have been reviewed (McClelland, 1978) and growth is projected to continue to the point that, within 3-5 years, 50% or more of the consumer's average weekly food expenditure may be spent on food and beverage out of home. Based on industry estimates (McClelland, 1978) each Canadian eats about one out of every 16 meals (assuming three meals a day) out of home. As has been pointed out (Watts et al, 1977) rapidly growing segments of food-away-from-home market are franchised food-serving outlets and food vending machines which may play a still more dominant role in future food selection patterns.


Courtesy Alberta Government

Food Costs and Expenditure

As is well known, the cost of food has risen sharply during the past few years and this increase is reflected in the food component of the Consumer Price Index (CPI). Since 1971, the CPI food component has consistently (with the exception for the period 1975-1976) risen at a faster rate than the all item CPI. At the same time, the percentage of disposable income spent on food at home has remained relatively constant at between 13-14% after an almost continual decrease since 1947 (Hassan & Karamchandani, 1979). Percent of disposable income spent on food at home in 1947 was 21.41% and in 1977 was 13.04%. These figures exclude the amount spent on food-away-from-home which is reported (Hassan & Karamchandani, 1979) to account for approximately 4.2% of disposable income for each of the years 1972-1977. The focus of both public and individual consumer attention has been on the cost of food. Certainly the pressure of increasing food costs is felt to a greater extent by those people whose personal disposable income has not been increasing at the rate of the national average — particularly fixed income and low income groups. In 1974, expenditure on food as a proportion of total family income for the lowest income grouping and for the highest income grouping was 29.1% and 13.0%, respectively (Statistics Canada, 62-544). The needs of the low income groups of Canadians require particular study in relation to the proportionate cost of food and their total income available for personal expenditure.

Changes in Supermarkets

Although Statistics Canada in calculating the CPI carefully delineates the component items of the food index, the average consumer may be more aware and focus on the total dollars spent at the supermarket for all item shopping without distinguishing between food

items and non-food items. The A.C. Nielsen Company, a marketing research firm which measures aspects of product movement through a statistically designed national sample of all grocery stores, reports (Space . . . 1979) in a study of 23 classes of products in the United States that the largest section in lineal feet of shelf space in 1977 for chains grossing more than $500,000 in sales was devoted to the group of household cleaning products. The average amount of shelf space for this class of products was just over 26% greater in 1977 than in 1975. The grouping of products with the next largest amount of shelf space exposure was that of the various types of dog food and cat food, with an average increase of 15.4% lineal feet in 1977 compared to 1975. Average shelf space devoted to liquid soft drinks increased 8.3% and to candy and gum just over 32% comparing the two years. On the other hand, several of the food product categories such as cereals, coffee and crackers were little changed in shelf exposure. The conclusion can be drawn from this study that those product categories which are amongst the largest and the fastest growing in terms of shelf exposure in United States supermarket chains are the non-food products. Although to consumers the proliferation of new products available in supermarkets may appear to continue to be increasing, in reality new product introduction has slowed considerably from the early 1970's. It is reported (New Product . . . , 1979) that almost 50% fewer product items were introduced into supermarkets in the United States in 1978 compared to the 9,252 items introduced into the test market and nationally in 1972. This decline in new product activity is in part due to manufacturers assuming a more cautious attitude toward the financial risks attached to new product development and introduction but also the market place has become more selective and perceptive in assessing the qualities of products to fulfill perceived consumer needs.

Similar trends may be perceived in Canada. Although supermarkets in the United States may apparently devote more floor and shelf space to non-food items than Canadian chains, general merchandise is reported to have taken over as much as 27% of the selling space in Canadian supermarket chain outlets (What Canadian . . . , 1979). The trend towards a changing proportion of food to non-food items in supermarkets may be convenient to some consumers for "one stop shopping". However, this trend may also provide consumers with greater difficulty in separating the impact of the cost of food items from that of general merchandise and non-food items on the total checkout cost.

From examination of CPI data the cost of food items has unquestionably increased, and increased significantly in recent years, but the perception of the increase may be magnified in some sectors of the population through a combination of co-purchase of non-food items in supermarkets, the eating-out syndrome and change in food selection practices.

New Developments and Alternatives

With a general concern over the cost of food, some people have sought alternatives with the goal to help reduce food purchase costs. Some of these attempts have been reflected in food items substitutions and eliminating food luxuries (Shoppers . . . , 1974). However, overall apparent per capita food consumption trends, as yet, have not altered significantly. Another attempt to change has been that of home gardening. A report by the British Columbia Select Standing Committee on Agriculture (British . . . , 1978) indicated about half the households surveyed reported growing some of their own food. The major reason given for having a home garden was for availability of fresh produce, although 31% of the gardens were less than 100 square feet in area and only 30% were larger than 500 square feet. Of those householders who reported to have home gardens, 22% said they grew their own food for economic reasons but 55% of these people reported that their garden saved them 10% or less of their annual food bill. A considerable time investment and land area is requried to provide a significant contribution to the overall food supply for the average sized household.

Alternatives to branded products and to the conventional supermarket have been introduced in the past few years, in part as a result of the economic environment and general focus on food costs. Among these innovations are generic products, some of which may show variable quality over time, the "no frills" or box stores which usually offer limited choice between brands and classes of foods and in some cases provide only one or two of fresh meat, fresh produce or dairy sections. Independent warehouse stores and cooperatives have provided alternatives for shopping in some selected areas for some time. These various alternatives attract segments of cost conscious shoppers and increase the number of types of reduced cost food purchase options. At the same time, primarily in the larger supermarkets and in larger metro centres, specialty food sections and food boutiques have been introduced which stock limited and generally costlier types of speciality foods. These extensions to the range of food product choice, both in price and in store type, would indicate the segmentation of food shopping behavior and provision of a spectrum of shopping choice to meet the different needs of specific segments of the population.

Changing Attitudes and the Conserver Ethic

Although Canadians have an abundant supply of food from which to choose and in general are well fed, some groups overly fed, there is concern about the implications of eating patterns of some segments of society in terms of nutrition and possible relationship to health. Some of these concerns have been expressed in relation to cardiovascular disease (Report . . . , 1976). Others (Sabry, 1975; Hiscocks, 1977) have expressed concerns related to the health and social costs of imprudent food choice behavior. Another concern of some people is that of waste of food and of resources used in the preparation of food in our society. Food wastage may occur through distribution and storage losses, discard of edible trimmings, plate scraps and unused portions resulting from over preparation. Little data exists in Canada to estimate the magnitude of these forms of waste. Several of these sources of waste may be the result of an attitude or belief of an unlimited abundance in our food supply without regard to concern for implications. In recent years, two developments have focussed attention to the issue of wastage or lack of conservation in relation to food supply. These two factors have been periodic world commodity shortages due to drought or crop damage and increased concern about energy source short-falls. Both factors have impinged on the cost of foods available to Canadians and perhaps it is from this motivating point that attention has been focussed more sharply in some segments of the population on increased awareness for conservation of food resources and supply and for more selective food purchase behavior.

There is seen in the concept of a conserver society as postulated by the Gamma Group of Canada a need to focus attention on possible changes in the mass consumption process and a consumption oriented society through conserving limited resources and preserving the ecology and environment (Shapiro, 1976). The routes that man and society may take to achieve this end may be voluntary or imposed. The action may not be solely technological or legislated but may represent a change in attitude and behavior by man to alter present consumption patterns and needs.

One of the behavioral or attitudinal changes that has been identified in varying degrees of practice in some segments of today's society has been described as "voluntary simplicity" (Elgin & Mitchell, 1977). It is postulated by Elgin and Mitchell that voluntary simplicity represents a significant new life style with the potential of far reaching effects on society. They claim this life style of voluntary simplicity may be the beginnings of what could develop as a mass movement among all age groups and which could exert a progressive impact on the way many millions of North Americans will be living in the next decade. This new approach to living could have a major effect on the way business must appeal to consumers and the types of demands consumers may make on producers and government to cater to a simpler life style. Elgin and Mitchell (1977, p. 4) state, speaking more broadly of consumption than simply food, the emergence of voluntary simplicity as an evolving lifestyle and way of thinking "could represent a major transformation of traditional [North] American values". It may portend shifts not only in values but shifts in consumption patterns, institutional operations, social movement and national policies. The essence of voluntary simplicity is said to be frugality of consumption, a strong sense of environmental urgency, a desire to return to living and working environments that are simpler and humanly more rewarding. This may mean a personal reassessment of living style and consumption behavior by groups of people; it is not necessarily for everyone and everyone may not form the same individual solutions. Some of this segmentation of behavior can be seen in the variety of food choice alternative and food shopping sources that have developed in the past few years. Also some of the activities some people have selected in recent years in home baking of bread, preserving produce from a home garden, making yogurt at home and for some, a reassessment of protein sources in food choice, may represent, for many perhaps unconsciously, a desire for simpler living, and less dependance on others.

TABLE I

Canadian Per Capita Imports and Apparent Consumption of Selected Fruits and Vegetables[1]

	Average Annual Imports Per Capita			Apparent Consumption Per Capita
	1962-66 (lbs.)	1972-76 (lbs.)	% Change	% Change (1962-66/ 1972-76)
Fresh apples	2.76	5.69	+106	− 4.3
Fresh cherries	0.18	0.63	+250	+50.5
Fresh grapes	11.50	11.77	+ 2.35	+ 2.8
Fresh melons	7.60	9.17	+ 20.7	+18.6
Fresh pears	1.38	2.40	+ 74.2	+39.3
Fresh strawberries	0.97	1.24	+ 27.6	+47.2
Canned peaches	1.88	2.62	+ 39.4	−20.0
Canned pears	0.41	0.60	+ 47.3	−12.7
Frozen strawberries	0.58	1.03	+ 77.6	+14.0
Fresh asparagus	0.31	0.52	+ 69.0	+60.0
Fresh corn	0.99	1.52	+ 53.7	−17.8
Cucumbers	1.64	2.32	+ 41.2	+64.8
Lettuce	10.33	15.52	+ 50.2	+39.9
Fresh tomatoes	8.85	10.54	+ 19.1	−10.1
Canned tomatoes	0.93	2.92	+ 67.4	+0.40

[1]Derived from Statistics Canada Data, Catalogue 32-226.

Food and Energy Utilization

There is a caution, however, in selecting a certain course of action or making a choice decision to achieve a specific goal. Mayer and Rawitscher (1979, p. 49), in discussing energy utilization and food, point out that "choices by consumers in both the manner of preparation and the type of food prepared make major changes in the total energy input; and equally clearly the trade-offs and alternatives are too complex for most supermarket shoppers to analyze". This is demonstrated by selected examples from stages of the food chain from producer to consumer. Overall, meat and particularly beef, is a most energy-intensive food, largely as a result of the consumption of total energy at the farm and feed lot level. Fish, on the other hand, is much less energy-intensive to raise and catch. The processing or preparation of food for freezing, canning or for direct consumption requires about the same amount of energy. In terms of packaging, the energy required to fabricate and form a metal can is reported to be up to three times the energy required to manufacture a paper package to hold the equivalent weight of a frozen food (Mayer & Rawitscher, 1979). In distribution, frozen food must be refrigerated through storage and retail display and transported by refrigerated truck, whereas canned product can be warehoused at temperatures maintained above freezing. The differential in energy consumed between minimal heating and constant refrigeration is considerable. Finally, the amount of energy used in home preparation of food can vary widely. Mayer and Rawitscher (1979) estimate, for instance, that canned salmon can be eaten directly in a salad using no additional preparation energy, cooked on stove-top adding about 400 kcalories per pound or baked in a souffle adding about 5000 kcalories per pound.

In many cases processing at a commercial level can be less energy-intensive per unit of product than doing the equivalent job at home. It has been estimated (Mayer & Rawitscher, 1979) that in baking bread 2330 kcalories of energy are consumed per pound in baking bread at home compared to 1590 kcalories per pound in a bakery. However, in addition to energy consumed for baking, the energy of transportation of commercial bread to the retail level also must be taken into account.

Finn (1979) estimated that 30% of total energy used in the Canadian food system starting at the farm level is used in the home preparation of food. This energy usage level is second only to that consumed in the processing and packaging of food. Energy consumed in home food preparation represents a major opportunity for research and education of consumers to develop an energy consumption consciousness in selecting foods and methods of preparation. It is, however, a very complex area of study.

An abundant supply of food is available in Canada and one which has the potential of meeting nutritional intake requirements if individual food selection is practiced prudently. Food costs are rising, and undoubtedly will continue to rise, imposing considerable economic pressure on low income and fixed income groups of people. The limitation of financial resources and the food needs and expenditure patterns of these segments of the population require careful study to assess opportunities for alleviation. However, for the majority of Canadians the proportionate amount spent on food must be kept in perspective relative to expenditures in other areas of goods and services. There are perhaps places where Canadians could benefically modify consumption patterns to reduce costs and alter food selection and preparation methods to conserve energy and reduce waste in the sense of voluntary simplicity. However, we should not deviate from the goal of a moderate and balanced food intake. To do otherwise would be to compound the possible consequences to nutritional status and implications to health. To effect conservation and economy, all areas of consumption and lifestyle must be examined for possible alteration or modification to off-set the impact of future increases in costs of food.●

REFERENCES

Apparent per capita food consumption in Canada. Statistics Canada. Catalogue 32-226.

British Columbia food shoppers' attitudes and behavior phase III report. B.C. Select Standing Committee on Agriculture, April, 1978.

Elgin, D. & Mitchell, A., Voluntary simplicity. Co-Evolution Quarterly, Summer:4-19, 1977.

Estimated population of Canada. Statistics Canada. Catalogue 91-201.

Finn, P.J., Energy use in Canadian food and beverage manufacturing and the impact of energy costs on food prices. *Proceedings of the Work Planning Meeting on Energy in the Food System,* Agriculture Canada, Ottawa, June, 1979.

Hassan, Z.A. & Karamchandani, D., *Handbook of food expenditures, prices and consumption.* Agriculture Canada, Ottawa, 1979.

Hassan, Z.A. & Karamchandani, D. *Urban family expenditure.* Statistics Danada, Catalogue 62-544.

Hiscocks, G.A., *The socio-economic aspects of a food and nutrition policy for Canada.* Paper presented at the AIC-CIFST Conference, Guelph, August, 1977.

Imported fresh produce prices. Retail Council of Canada, Toronto, October, 1979.

Mayer, J. & Rawitscher, M., Energy, food and the consumer. *Technology Review* 81:45-52, 1979.

McClelland, R.M., An overview of the Canadian foodservice market, 1976-77. Consumer and Corporate Affairs, Ottawa, 1978.

New product success ratios. *Nielsen Researcher.* A.C. Nielsen Company, Chicago, 1979.

Report of the committee on diet and cardiovascular disease. National Health and Welfare Canada, Ottawa, 1976.

Sabry, Z.I., The cost of malnutrition in Canada. *Canadian Journal of Public Health,* 66:291-93, 1975.

Shapiro, S.J., *The marketing system and the conserver society.* GAMMA Group, Université de Montreal; McGill University, 1976.

Shoppers frown on "luxury" foods in coping with prices. *Food Product Development* 8(10):48, 1974.

Space allocations-Dry groceries. Forty-third annual Nielsen review of retail grocery trends. Supermarkets, Chain Store Age, 1979.

Urban family food expenditure. Statistics Canada. Catalogue 62-545.

Watts, T.A., Gullett, E.A., Sabry, J.H. & Liefeld, J.P., *Canadian food consumption patterns and nutrition trends.* Consumer and Corporate Affairs, Ottawa, 1977.

Watts, T.A., The foods we eat . . . Trends in consumption. The Consumer's Right to Know. Kraft Limited, Montreal, April, 1979.

What Canadian food chains are doing with general merchandise. *Canadian Grocer,* 93(3):27-28, 1979.

Nutrition and Vegetarianism

(Continued from page 14)

41. Connor, W.E., D.B. Stone, & R.E. Hodges. J. Clin. Invest. *43*:1691, 1964.
42. National Diet-Heart Study Research Group. Circulation *37* (Supplement I): I-428, 1968.
43. Anderson, J.T., F. Grande, & A. Keys. Am. J. Clin. Nutr. *29*:1184, 1976.
44. Wynder, E.W. Cancer Res. *35*:3388, 1975.
45. Hill, M.J. CRC Crit. Rev. Toxicol. *4*:31, 1975.
46. Berg, J.W., M.A. Howell, & S.J. Silverman. Health Serv. Rept. *88*:915, 1973.
47. Howell, M.A. J. Chron. Dis. *28*:67, 1975.
48. Burkitt, D.P. Cancer *28*:3, 1971.
49. Burkitt, D.P. Br. Med. J. *1*:274, 1973.
50. Mann, G.V., & A. Spoerry. Am. J. Clin. Nutr. *27*:464, 1974.
51. Mann, G.V. N. Engl. J. Med. *297*:644, 1977.
52. Nichols, A.B., C. Ravenscroft, D.E. Lamphiear, & L.D. Ostrander. Am. J. Clin. Nutr. *29*:1384, 1976.
53. Reiser, R. Am. J. Clin. Nutr. *26*:524, 1973.
54. Reiser, R. Am. J. Clin. Nutr. *31*:865, 1978.
55. Glueck, C.J., & W.E. Connor. Am. J. Clin. Nutr. *31*:727, 1978.
56. Nichols, A.B., C. Ravenscroft, D.E. Lamphiear, & L.D. Ostrander. JAMA *236*:1948, 1976.
57. Truswell, S.A. Am. J. Clin. Nutr. *31*:977, 1978.
58. Enstrom, J.E. Br. J. Cancer *32*:432, 1975.
59. Enig, M.G., R.J. Munn, & M. Keeney. Fed. Proc. *37*:2215, 1978.
60. Lyon, J.L., & A.W. Sorenson. Am. J. Clin. Nutr. *31*:S227, 1978.
61. Sacks, F.M., W.P. Castelli, A. Donner, and E.H. Kass. N. Engl. J. Med. *292*:1148, 1975.
62. West, R.O., & O.B. Hayes. Am. J. Clin. Nutr. *21*:853, 1968.
63. Ruys, J., & J.B. Hickie. Br. Med. J. *2*:87, 1976.
64. Sanders, T.A.B., & F.R. Ellis. Proc. Nutr. Soc. *36*:43 A, May, 1977.
65. Sanders, T.A.B., F.R. Ellis, & J.W.T. Dickerson. Am. J. Clin. Nutr. *31*:805, 1978.
66. Hardinge, M.G., & F.J. Stare. J. Clin. Nutr. *2*:83, 1954.
67. Phillips, R.L. Cancer Res. *35*:3513, 1975.
68. Phillips, R.L., F.R. Lemon, W.L. Beeson, & J.W. Kuzma. Am. J. Clin. Nutr. *31*:S191, 1978.
69. Lyon, J.L., M.R. Klauber, J.W. Gardner, & C.R. Smart. N. Engl. J. Med. *294*:129, 1976.
70. Hill, M.J., B.S. Drasar, V.C. Aries, J.S. Crowther, G.M. Hawksworth, & R.E.O. Williams. Lancet *1*:95, 1971.
71. Goldin, B., & S.L. Gorbach. Cancer *40*:2421, 1977.
72. Goldberg, M.J., J.W. Smith, & R.L. Nichols. Ann. Surg. *186*:97, July 1977.
73. Aries, V.C., J.S. Crowther, B.S. Drasar, M.J. Hill, & F.R. Ellis. J. Pathol. *103*:54, 1971.
74. Goldin, B.R., & S.L. Gorbach. J. Natl. Cancer Inst. *57*:371, 1976.
75. Macdonald, I.A., G.R. Webb, & D.E. Mahony. Am. J. Clin. Nutr. *31*:S233, 1978.

ACKNOWLEDGMENTS: The National Dairy Council assumes responsibility for writing and editing this article. We acknowledge the help and suggestions of the following reviewers in its preparation: J. T. Dwyer, D.Sc. Director, Frances Stern Nutrition Clinic, New England Medical Center Hospital, Boston, Massachusetts; and R. L. Phillips, M. D., Dr. P. H., Professor, School of Health, Department of Biostatistics and Epidemiology, Loma Linda University, Loma Linda, California.

An industry "facts" booklet just published by the Canadian Restaurant and Foodservices Association estimates that more than 35% of all food expenditures by Canadians in 1979 will be for food away from home (one meal in three). Based on recent government studies, this figure is expected to exceed 50% by 1985.

Canarama
Food Preservation Center Grand Falls, Newfoundland

Jocelyn Wood

The idea of a *community canning center* originated with the Ball Corporation of Muncie, Indiana, U.S.A. They developed a Compact Canning Unit that can be used as a self-help facility to preserve foods in season for later use. While many units are located in the U.S.A. and in developing countries, there are only two units in Canada. They are located in Grand Falls, Newfoundland and Vancouver, B.C.

After visits to two centres in the States in 1976, it was decided that this facility would be ideal for use in Newfoundland and Labrador. With an abundance of fish, wild game, berries and vegetables available it seemed logical to establish a unit in this province.

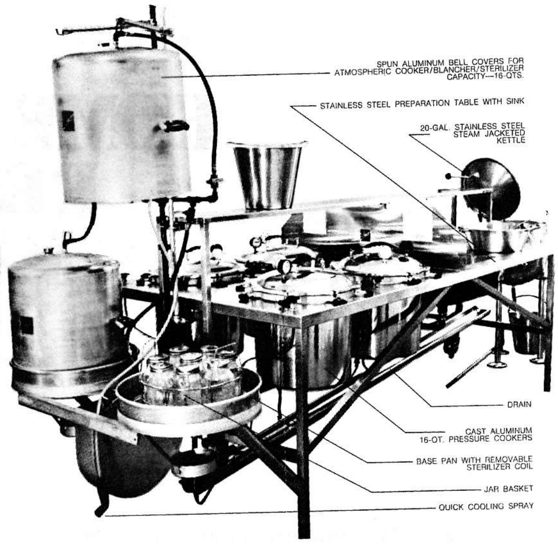
The Exploits Valley Development Association in conjunction with the Department of Rural, Agricultural and Northern Development and Department of Regional Economic Expansion has established this center in the town of Grand Falls, Newfoundland. The equipment from the Ball Corporation cost approximately $12,000.00 and the building approximately $83,000.00. The Exploits Valley Development Association is responsible for the operation and maintenance of the building and the equipment.

The *Canarama* brings people together for their mutual benefit, which is both immediate and tangible. Some of the services it provides are:

- Savings for family food budgets
- Learning proper food preservation skills
- Correcting community diet deficiencies and educating people about nutrition
- Preparing naturally processed foods to individual tastes and to dietetic requirements
- Developing a pride in accomplishment and promoting self-reliance
- Promoting social integration

The building erected by the Development Association is an all steel building, inside and out. It is 24′ x 40′ with concrete floor. The equipment inside contains four 16 quart pressure cookers, recording thermometers, a spray cooling tank, and two atmospheric cookers for blanching, sterilizing or cooking. There is also a 40 gallon steam kettle, preparation sinks, water heater and steam boiler as well as a juicer-pulper machine for making sauces and juice.

With the high cost of foods in Newfoundland due to being an island province, people are encouraged to preserve more foods for their own use. Garden plot programs in various parts of the province have been started in urban



Ball Compact Canning Unit developed in Muncie, Indiana and used in community canning centers in St. John's, and Vancouver.

centers and rural Newfoundland has always had a tradition of raising their own vegetables and fishing and hunting for moose and caribou.

The *Canarama* is staffed with an experienced supervisor trained in all aspects of food preservation. It is open to the general public five days a week from Tuesday to Friday from 1:30 PM to 9:00 PM and on Saturdays from 9:00 AM to 5:00 PM by appointment. The center can be used by individuals, service clubs, church groups, senior citizens, and schools.

The center has bottles and cans available in various sizes as well as *Canning Guide Books,* lids, etc. The processing fees charged to the patrons are 10¢ per pint and 15¢ per quart. Any type of food can be processed in the center. Low-acid foods require processing in a pressure cooker and as these are expensive to buy, a center such as this eliminates that problem. The four pressure cookers are automatically controlled to process at 10 lbs. pressure (240°F) to destroy spoilage organisms. Low-acid foods are all meats, fish, poultry and all vegetables except tomatoes. High acid foods such as fruits, berries, jam and pickles can be processed in the atmospheric cookers which cook at 212°F.

Safety, speed and sanitation are the advantages of such a center. The single unit is designed to permit a flow of four to eight patrons per hour. Approximately 1,500 quart jars of tomatoes or 220 quart jars of meat can be processed in eight hours of operation.

Each patron is given a portable work table when entering the center and proceeds to a work area for preparation. Under the supervision of the supervisor they prepare their food. Spray cooling tanks cool the jars in 20 to 30 minutes after processing.

The Canarama is a pilot project and one which we hope will prove successful so that more will be established throughout the province. It is a lovely place to work, well ventilated and a joy to use.●

Jocelyn Wood is a home economist with the Department of Rural, Agricultural and Northern Development, St. John's, Newfoundland.

HOME ECONOMICS RESEARCH JOURNAL

November 1979, Vol. 8, No. 2

ISSN No. 0046-7774

Identifying Predictors of Competency in Clothing Construction

Susan Horvath, M.Sc.
Lecturer
Brescia College
London, Ontario

Nelma Fetterman, Ph.D.
Associate Professor
University of Alberta
Edmonton, Alberta

Abstract

The underlying objective of this study was to examine the interrelationships of previous knowledge of clothing construction, manual dexterity, and field-dependence-independence with clothing construction skills and knowledge. A battery of three tests was administered to 40 students enrolled in an introductory university clothing construction course. The responses were analyzed using multiple regression in an attempt to identify predictors of competency in clothing construction. The placement test score, an indicator of previous knowledge of clothing construction, was the best predictor of scores in practical course work, written course work, and final course grade. The score for manual dexterity was significant only in predicting final course grade. Scores for field-dependence-independence did not significantly explain variation in scores pertaining to clothing construction.

Résumé

L'objectif fondamental de cette étude était d'examiner la corrélation entre, d'une part la connaissance préalable de la confection des vêtements, la dextérité manuelle et le rapport de dépendance-indépendance dans ce domaine, et, d'autre part le talent et la connaissance préalable de la confection des vêtements. Une série de trois tests a été donnée à 40 étudiants inscrits à un cours universitaire d'introduction à la confection des vêtements. Les réponses ont été analysées selon le principe de régression multiple dans le but d'identifier les signes indicateurs de compétence dans la confection des vêtements. Le résultat du test de niveau qui implique une connaissance préalable de la confection des vêtements a été le meilleur signe indicateur des résultats dans les travaux pratiques,le travail écrit et la note finale du cours. Le résultat concernant la dextérité manuelle n'a été significatif que pour prédire la note finale du cours. Les résultats concernant le rapport de dépendance-indépendance dans ce domaine n'ont pas expliqué de façon significative le changement des résultats se rapportant à la confection des vêtements.

Research conducted at the University of Alberta October 1978 - March 1979.

One major goal of education is imparting knowledge to students in a manner that is beneficial to each. This is only possible if educators acknowledge the existence of individual differences and plan learning experiences that meet each student's needs (Chadderdon, 1977). Obvious differences do exist among individuals in their level of accomplishment of a given task. Certainly there are those who excel in specific areas, but in other situations the same persons may find themselves deficient and incapable. What determines how proficient one is at a specific task? Perhaps each task has its own set of criteria and if one fulfills these adequately one can accomplish the job.

The area of clothing construction is one in which distinct differences in skills can be observed among individuals. Some people are more adept at producing garments of high quality construction, while others have difficulty with this same undertaking.

The need exists to pretest students' entering abilities so that their learning experiences can be adjusted to these abilities. Using this approach in teaching university level clothing construction courses may enable students to receive greater benefit from the instruction and experience gained in the course. By being aware of the students' entering abilities the instructor should be able to help students select experiences which provide challenge but are not greatly beyond their level of skill. As well, such information may help the instructor in developing modes of instruction for different levels of ability.

The underlying objective of this study was to examine the interrelationships of previous knowledge of clothing construction, manual dexterity, and field-dependence-independence with (a) clothing construction skill as measured by score on clothing construction projects, (b) knowledge of clothing construction as measured by score on written assignments and examinations covering course work, and (c) competency in clothing construction as measured by the final grade in the course. It is necessary to define two terms used in this objective to aid understanding. Clothing construction skill refers to the physical and mental activities required for constructing garments. Knowledge of clothing construction refers to the mental processes required for the recall and use of factual information pertaining to clothing construction problems.

The second objective set for this research was to determine if the use of instruments in addition to the placement test contributed significantly to the explanation of variability in competency in clothing construction. Through this objective the possibility that the additional instruments provided information concerning abilities the students possessed but are not measured by the placement test was examined. Finally, the compilation of a battery of tests, provided that more than one of these suggested criteria proved applicable to clothing construction, was investigated. Such a test battery could then be administered to students initially enrolling in clothing construction courses at the University of Alberta in an effort to evaluate students' abilities, and use the assessment in planning learning experiences appropriate to their abilities.

Theoretical Framework

The theoretical framework for this study arose out of research in three separate areas, namely clothing construction pretesting, manual dexterity, and field-dependence-independence. Epps' (1972) work on a clothing construction pretest provided the basis for one segment of the present study. Epps found the written pretest she developed to be a valid predictor of success in clothing construction, the final course grade being the measure of success. A predictive measure such as this would enable the instructor to give additional attention to those students who are more likely to experience difficulty, or group students according to their previous knowledge.

Tiffin and Asher (1948) found that a relationship exists between measures based on a dexterity test and the quality and quantity of work performed by an individual on tasks which require dexterity. When one considers the arm-hand movements required in handling a garment being constructed, plus the finer movements the fingers perform throughout the process, it is obvious that clothing construction is a task which does involve dexterity. After administering a time-consuming practical skills test in clothing contruction, and noting the movements required to perform the test, Henson (1975) suggested replacing the practical skills test with a standardized dexterity test.

Work by Witkin, Oltman, Raskin and Karp (1971) suggested that individuals who tend to perceive in a field dependent manner, as measured by the Embedded Figures Test (EFT), also tend to have difficulty isolating essential information from the context in which it is presented and applying it in a different context. In clothing construction, printed instructions are presented as line drawings, in two-dimensional form, with a text. The individual must be capable of taking this information out of the context in which it is presented and applying it to a three-dimensional situation, namely, the article being constructed. It appears likely that a student whose mode of perception is field independent would understand more readily clothing construction concepts and be better able to apply them than a student whose mode of perception is field dependent.

Procedure

Description of the Instruments

For several years the Clothing and Textiles Division at the University of Alberta has administered a clothing construction placement test. Students are given this test prior to enrolling in CL TX 203. If the student receives a grade higher than a predetermined pass mark, the student has the option of enrolling in CL TX 203, Clothing Construction and the Basic Pattern, or enrolling in CL TX 307, a more advanced level course. This placement test undergoes frequent revision resulting from changes in the course content upon which the test is based, refinement of test items based upon analyses of students' responses, and changing the amount of time required to complete the test. The 1978 Revised Placement Test consists of 90 items. Sixty-seven questions are multiple choice and 23 are true-and-false. Sixty questions are related to basic clothing construction techniques and principles of construction. The remaining 30 questions cover the fitting of garments and pattern alterations. The estimate of item-total test reliability, carried out by applying Kuder-Richardson Formula 20 (Gulliksen, 1950, p. 224) to the placement test scores of 149 subjects, is a reliability coefficient of .88.

Purdue Pegboard

The Purdue Pegboard Test is a measure of manual and finger dexterity. Five subtests are performed, requiring the subject to place pins, or a combination of pins, collars, and washers, in holes in a board as quickly as possible. The three-trial method of administration was used in this study.

This involved repeating each subtest three times and adding the scores. The three-trial method, although more time consuming, is more reliable than the one-trial method (Tiffin & Asher, 1948; *Purdue Pegboard Examiner Manual.* 1961).

All five subtests could not be used in the analysis as extreme collinearity (intercorrelation in the .8 to 1.0 range) existed between several pairs of these variables. When extreme collinearity exists between independent variables, regression analysis does not yield acceptable results (Nie, Hull, Jenkins, Steinbrenner and Bent, 1975, p. 340). To overcome this problem, scores from only two subtests were used. The scores used in the study were Total (which is the sum of the Right, Left and Both Hands subtests) and Assembly.

Witkin's Embedded Figures Test

The object of the Embedded Figures Test is to locate a simple figure, which the subject has previously been shown, within a larger complex figure. The score is the speed in seconds with which the subject is able to find the hidden figure. There is a three minute time limit for locating each figure. The greater the time required by the subject, the more his mode of perceiving tends to be field dependent (Witkin et al., 1954, p. 14). Form A of the test was used, and the figures were presented in the suggested order.

Sample

The mean age of the students in CL TX 203 was 21 years, the range was 17-46 years, and this group comprised 39 females and 1 male. Although a larger sample size was desired it was not possible due to the low enrollment in CL TX 203 during the term when the study was conducted. As the subjects were not chosen randomly, the findings of this research cannot be generalized beyond this study.

Multiple Regression Analysis

Multiple regression analyses were performed to examine the relationships between each dependent variable and a set of independent variables. This analysis determined the proportion of the variability in competency in clothing construction that was explained by each of the independent variables. The independent variable which explained singly the greatest amount of the variability was listed first, and the remaining independent variables were listed in order of their relative contribution to the amount of explained variance in the dependent variable. The three dependent variables used to define competency in clothing construction included the score on practical construction projects, the score on the written portion of course work, and the final grade received for the course. Although the scores on the practical construction projects and the written segments were included in the calculation of the final course grade, the final course grade included three assignments which could not be classified specifically as written or practical construction assignments. These three assignments constituted 20% of the final course grade. The independent variables were: (1) score on the 1978 Revised Placement Test, (2) scores on two Purdue Pegboard subtests, Total and Assembly, and (3) score on the Embedded Figures Test.

Findings

The mean, range and standard deviation for the EFT scores of the sample are in relatively close agreement with the findings of Kernaleguen (1968) and Baer (1970) (see Table 1). The sample in the present study, and in the two studies used for comparison, consisted of female college students enrolled in home economics courses. This may be a factor contributing to the close agreement in results among the three studies.

TABLE 1

Comparison of the Range, Mean and Standard Deviation for Scores Obtained on the Embedded Figures Test

Sample	N	Sex	Range	Mean	S.D.
Kernaleguen (1968)	68	F	70-977	438	203
Baer (1970)	102	F	74-1297	477.18	251.25
Horvath (1979)	39	F	83-777	404.28	162.24

TABLE 2

Comparison of the Means for Scores on Purdue Pegboard Subtests Total and Assembly

Sample	N	Total Subtest	Assembly Subtest
Alderman (1949) (male veterans)	150	135.90	120.40
Tiffin and Asher (1948) (college)	434	147.42	126.84
Horvath (1979) (college)	40	135.40	132.55

Alderman (1949) and Tiffin and Asher (1948) report results for the three-trial method of administration of the Purdue Pegboard subtests (see Table 2). The mean for the Total subtest in this study compares favourably with the results in the Alderman (1949) study, but is lower than that for the Tiffin and Asher (1948) study. The large difference in the sample size of this study and that of Tiffin and Asher (1948) may be contributing to the difference noted in the means. For the Assembly subtest the mean for this study is higher than in the Alderman (1949) and Tiffin and Asher (1948) studies. The Alderman (1949) sample consisted of males, the Tiffin and Asher (1948) sample was males and females, and the sample in the present study was primarily females (39 females, 1 male). Since females tend to score higher on the Assembly subtest than males (Tiffin and Asher, 1948) this explains the higher mean scores for the Assembly subtest in the present study.

Previous knowledge of clothing construction as measured by the placement test explained 22 percent of the variability in clothing construction skill, 39 percent of the variability in knowledge of clothing construction, and 35 percent of the variability in the final grade (see Table 3). The addition of a second independent variable, score on Purdue Pegboard Assembly test (a measure of manual dexterity), significantly increased the amount of explained variability in knowledge of clothing construction to 56 percent, and increased the amount of explained variability in the final grade to 42 percent. The remaining independent variables, Purdue Pegboard Total (the second measure of manual dexterity) and field-dependence-independence, did not contribute significantly to the explanation of the variability in any of the dependent variables.

TABLE 3

Multiple Regression Analysis for CLTX 203 Scores on Practical Course Work, Written Course Work, and Final Course Grade (Dependent Variables) and Placement Test Score, Purdue Pegboard Total and Assembly, and EFT (Independent Variables) N = 40

Dependent Variable	Independent Variable	R^2	d.f.	F*	p
Score on Practical Course Work	Placement Test	.215	1,38	10.39	.01
	Purdue Pegboard Total	.237	1,37	1.10	n.s.
	EFT	.255	1,36	0.86	n.s.
	Purdue Pegboard Assembly	.262	1,35	0.33	n.s.
Score on Written Course Work	Placement Test	.386	1,38	23.87	.01
	Purdue Pegboard Assembly	.555	1,37	14.10	.01
	EFT	.586	1,36	2.68	n.s.
	Purdue Pegboard Total	.598	1,35	1.01	n.s.
Final Course Grade	Placement Test	.347	1,38	20.20	.01
	Purdue Pegboard Assembly	.417	1,37	4.42	.05
	Purdue Pegboard Total	.426	1,36	0.55	n.s.
	EFT	.430	1,35	0.29	n.s.

Note: n.s. = not significant

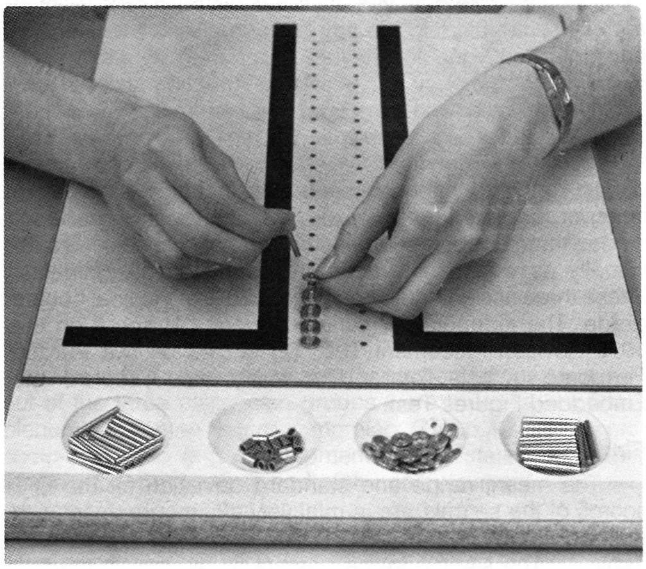
* The F value reported is the F value for the variable when it was initially entered into the regression equation.

Interpretation

In CL TX 203 previous knowledge of clothing construction was the variable which explained the largest amount of the variability for all three dependent variables, clothing construction skill, knowledge of clothing construction, and competency in clothing construction. The score each student received on the measure of previous knowledge of clothing construction was a meaningful predictor of the score received on actual construction projects, written assignments and examinations covering the course work, and the final course grade. This result was anticipated because students with more experience and previous knowledge of clothing construction tend to perform better in clothing construction class than students with little or no background experience. This result supported evidence from other studies (Berry, 1963; Epps, 1972; Hale, 1963; Nieman, 1961).

Manual dexterity was not significant in explaining variation in clothing construction skill. Fleishman (1953) noted that the underlying assumption when administering a dexterity test is that the greater the resemblance between the test and the job, the better the test functions as a predictor of success. Tiffin and Asher (1948) stated that a given dexterity test may be a satisfactory measure for certain manual tasks, yet unsuitable for other tasks which seem to be similar. Thus, the manual dexterity required for clothing construction may differ from that which is measured by the Purdue Pegboard.

The score on the Embedded Figures Test did not significantly contribute to the explained variation in scores on practical construction projects, written assignments, and the final course grade. Work by Witkin et al. (1971) suggested that individuals whose mode of perception tends to be field dependent, as measured by the EFT, tend to have difficulty isolating specific information from the context in which it is presented and applying it in a different context. The results of this study suggested that the ability required to break up the organized field presented in the EFT must differ from the ability needed to understand readily clothing concepts and to apply them satisfactorily. As well, the material that is to be learned in the clothing construction courses examined in this study may tend to be presented in an already organized form. Witkin et al. (1977) noted that, when the material presented is organized, structuring is not called for necessarily, and differences in the learning of field dependent and field independent students may not be apparent. Although the objective was to compile a battery of tests suitable for predicting competency in clothing construction for students at the University of Alberta, the 1978 Revised Placement Test, currently in use, was determined to be the most useful measure. The additional measures, the Purdue Pegboard Test and the Embedded Figures Test, did not significantly improve the predictive abil-



Performing the Purdue Pegboard Assembly Subtest

ity. The small increase in explained variability when the additional instruments were included did not justify the expenditure of time and energy required to assess manual dexterity and field-dependence-independence.

Recommendations

An investigation of other variables which may increase the amount of explained variability in competency in clothing construction is required to identify useful predictors of clothing construction competency. One measure to consider is an aiming test. Fleishman (1954) states that aiming has been defined as "the ability to perform quickly and precisely a series of accurately directed movements requiring eye-hand coordination" (p. 450). Perhaps the ability measured by aiming tests would be involved in clothing construction. Other tests of manual dexterity, in place of the Purdue Pegboard, could also be considered. As well, the development and administration of an experience questionnaire may provide valuable information regarding a student's previous knowledge and experience in clothing construction. Questions pertaining to activities which require finger dexterity and creativity could also be included. •

References

Alderman, E. Comparison of One-Trial and Three-Trial Purdue Pegboard Norms. *Occupations,* 1949, *27,* 251-252.

Baer, A.M. *Perception of Line and Design in Clothing.* Unpublished doctoral dissertation, Utah State University, 1970.

Berry, J.C. *The Revision and Development of a Clothing Pretest for Appraising Competencies of First Year Clothing Students.* Unpublished master's thesis, Oklahoma State University, 1963.

Chadderdon, H. *Determining the Effectiveness of Teaching Home Economics.* Home Economics Education Association, Washington, D.C., 1977.

Epps, H.H. *Development of a Pretest to Predict Success in a Basic Clothing Construction Course at Winthrop College.* Unpublished master's thesis, Winthrop College, 1972.

Fleishman, E.A. Testing for Psychomotor Abilities by Means of Apparatus Tests. *Psychological Bulletin,* 1953, *50,* 241-262.

Fleishman, E.A. Dimensional Analysis of Psychomotor Abilities. *Journal of Experimental Psychology,* 1954, *48,* 437-454.

Gulliksen, H. *Theory of Mental Tests.* New York: John Wiley & Sons, 1950.

Hale, M.B. *Analysis of the 1960 and 1961 Oregon State University Clothing Construction Placement Test.* Unpublished master's thesis, Oregon State University, 1963.

Henson, M.A. Clothing Construction Placement Test for Students at the University of Arkansas College of Agriculture and Home Economics. Unpublished master's thesis, University of Arkansas, 1975.

Horvath, L.S. *Use of a Test Battery for Predicting Competency in Clothing Construction.* Unpublished master's thesis, University of Alberta, 1979.

Kernaleguen, A.P. *Creativity Level, Perceptual Style and Peer Perception of Attitudes Towards Clothing.* Unpublished doctoral dissertation, Utah State University, 1968.

Nie, N.H., Hull, C.H., Jenkins, J.G., Steinbrenner, K., & Bent, D.H. *Statistical Package for the Social Sciences* (2nd ed.). New York: McGraw-Hill, 1975.

Nieman, M.R. *Effectiveness of the Placement Test for Sectioning Students in the Elementary Clothing Construction Course.* Unpublished master's thesis, Iowa State University of Science and Technology, 1961.

Purdue Pegboard Examiner Manual. Chicago: Science Research Associates, 1961.

Tiffin, J. & Asher, E.J. The Purdue Pegboard: Norms and Studies of Reliability and Validity. *Journal of Applied Psychology,* 1948, *32,* 234-247.

Witkin, H.A., Lewis, H.B., Hertzman, M., Machover, E., Meissner, P.B. & Wapner, S. *Personality Through Perception.* New York: Harper & Brothers, 1954.

Witkin, H.A., Oltman, P.K., Raskin, E., & Karp, S.A. *A Manual for the Embedded Figures Test.* Palo Alto, California: Consulting Psychologists Press, 1971.

Witkin, H.A., Moore, C.A., Goodenough, D.R., & Cox, P.W. Field-Dependent and Field-Independent Cognitive Styles and Their Educational Implications. *Review of Educational Research,* 1977, *47,* 1-64.

Call For Papers

An invitation is extended for the submission of **Original Research Papers** and **General Articles** for the *Canadian Home Economics Journal.* Topics relating to the well-being of families and individuals, to social issues, to issues affecting the profession of home economics, and to updating professional knowledge are of particular interest to the readers of the *Journal.* Authors are encouraged to write articles pertaining to the themes listed below but are free to write on other topics of interest to home economists. The **Guide to Authors,** printed on page 70 outlines the procedures to follow when preparing and submitting a paper.

The Conserver Society

Theme for 1980

Focus On	Submission Deadline
Spring: Housing	February 1, 1980
Summer: Management	May 1, 1980
Fall: Energy	August 1, 1980

Update: *Trends '81*

Theme for 1981

Focus On	Submission Deadline
Winter: Social	October 15, 1980
Spring: Economic	January 15, 1981
Summer: Education	April 15, 1981
Fall: Technological	August 1, 1981

Measuring Children's Problem Solving Performance in Hypothetical Interpersonal and Mathematical Situations

Dianne K. Kieren, Ph.D.
Professor & Chairperson
Family Studies Division
Faculty of Home Economics
University of Alberta

Thomas E. Kieren, Ph.D.
Professor
Secondary Education
Faculty of Education
University of Alberta

June Henton, Ph.D.
Associate Professor & Chairperson
Family Life Department
College of Home Economics
Oregon State University, Oregon

Abstract

The purpose of this research was to develop a technique to measure children's problem solving performance. Sixteen children, 4 years 6 months (4.6) to 5 years 6 months (5.6) were interviewed in five playlike situations. The data were coded based on transcripts of audio tapes and observer reports.

Using physical and interpersonal settings, this research sought to answer the following questions:

- How do children perceive problems?
- What is the range of alternative problem solutions?
- To what extent and by what criteria do children evaluate solutions?

While the study was exploratory, the following observations indicate the potential of this method. Children of this age perceive problems but mainly in terms of personal consequences. Nearly all of the children could give several alternative problem solving actions for each setting. While the mathematical-physical problems proved to generate more physical action, with children using counting and three-dimensional geometric representations, there appears to be a relationship between the style of problem solving used in mathematical and interpersonal settings. It is concluded that this method can be productive in capturing elements of children's problem solving behaviour.

Résumé

Le but de cette recherche était de développer une technique servant à évaluer la façon dont les enfants résolvent les problèmes. Seize enfants entre 4 ans et 6 mois (4,6) et 5 ans et 6 mois (5,6) ont été interviewés au cours de 5 situations de type récréatif. Les codes des données ont été basés sur le texte écrit d'enregistrements sur bande et sur des rapports effectués par des observateurs.

En utilisant des situations physiques et personnelles, cette recherche s'est efforcée de répondre aux questions suivantes:

1. Comment les enfants perçoivent-ils les problèmes?
2. Quelle est la portée des solutions aux problèmes alternatifs?
3. Dans quelle mesure et selon quel critère les enfants évaluent-ils les solutions?

Malgré le caractère exploratif de cette étude, les observations suivantes indiquent le potentiel de cette méthods. Les enfants de cet âge-là perçoivent les problèmes mais essentiellement en termes de leurs conséquences personnelles. Presque tous les enfants ont pu donner plusieurs solutions aux problèmes alternatifs pour chaque situation. Alors que les problèmes mathématiques-physiques ont engendré davantage d'action physique, les enfants utilisant le calcul et les représentations géométriques tri-dimensionnelles, il semble qu'il y ait un rapport entre la façon dont ils résolvent les problèmes dans des situations mathématiques et dans des situations personnelles. On en conclut que cette méthode peut atteindre des résultats productifs du fait qu'elle réussit à capter des éléments dans le comportement des enfants face à la résolution des problèmes.

Research completed at Texas Tech University, May, 1977. This is a revision of a paper presented at the annual meeting of the Canadian Home Economics Association, Research Reporting Session in July, 1978.

Introduction

Problem solving is the process by which individuals or groups cope with situations with desired but unachieved ends. As such, problem solving is an every day requirement for human beings as they interact in the world of work and play.

In order to function as a problem solver, a person needs several prerequisites: a basic level of cognitive development, a recognition of situations deemed to be problematic, a repertoire of strategies to employ in problem solutions, understanding of a problem solving process and sufficient motivation to become involved in problem solving. These prerequisites may be possessed by children as well as adults. Research with infants and older children indicates that they do indeed solve problems within the general limits of their developmental resources (Murphy, 1974).

The study of children's problem solving behaviour has taken different thrusts. Researchers interested in the developmental patterns of cognitive functioning have followed Piaget's lead and have attempted to chart the stages in the development of problem solving behaviour (Inhelder & Piaget, 1958). They have concluded that children do not acquire transferable problem solving strategies until the stage of formal operations at approximately 12 years of age (McLaughlin & Brinley, 1973). While this approach has been theoretically oriented, another has been empirical in nature, attempting to relate observed problem solving behaviour to other variables. For example, researchers interested in environmental influences have studied the structures of the social system and the family which shape communication and language and likewise shape thought and cognitive styles of problem solving (Hess and Shipman, 1967; Bernstein, 1962).

Another type of investigation of child's problem solving behaviour has been observational in nature attempting to describe actual behavioural episodes (Nelson & Sawada, 1975; Smith & Ross, 1959). While both the theoretical and empirical approaches have indeed added to the body of knowledge of children's problem solving and socialization for problem solving, there have been comparatively few attempts to document children's actual problem solving behaviour when exposed to a variety of salient social or environmental problems. Questions such as the following have not been adequately studied: Can young children perceive a situation as problematic? Can they generate several different relevant alternatives to the problem? Can they evaluate alternatives using a particular criterion? Can they choose a problem solving strategy based on these criteria? Because it is assumed that problem solving is a natural human activity often occurring spontaneously and perhaps in a disjoint way in children, it is difficult to answer such questions using naturalistic observation.

This report is a summary of a study of a method for observing problem solving in young children in provoked hypothetical situations. The main research questions were: Will the method used elicit various problem solving behaviours in children? What will be the nature of such behaviours? Will some elements of the method be more successful than others? How will interpersonal and mathematical-physical task responses compare?

As noted above, this research is based on the assumption that there are identifiable elements in the problem solving process and that humans learn such behaviours beginning at birth and continuing throughout their lives. The research tests the hypothesis that behaviours exhibited by children solving salient interpersonal problems will have basic similarities with those in mathematical-physical problems.

Review of Relevant Literature

In order to provide a framework for the study of the process of children's problem solving, the work of many other problem solving researchers from theoretical and empirical schools serves as a point of departure. Literature which describes the process and the skills related to problem solving is particularly relevant.

The step-wise nature of the problem solving process has been well documented (Brim, Letz, Lavin & Goodman, 1962; Carkhuff, 1973; Kieren, Henton & Marotz, 1975). While the labelling of the steps differs in each of these analyses, there is an agreement among problem solving researchers that the process has several basic phases: a recognition phase, an alternative search, an action phase and an evaluation phase. The study of human problem solving indicates that the boundaries of these phases are fluid and that as a person becomes more adept certain steps may become combined making the process appear automatic or habitual (Kieren, Vaines & Badir, 1978).

As children grow, they develop language and communicative skills and are socialized in problem solving skills. Spivack and Shure (1974) suggest that this does not occur automatically and that parents and other care givers must provide opportunities for children to develop a cognitive problem solving style and to generate their own **(not just their parents' or care giver's)** solutions for solving typical problems in their own environment.

Many skills appear to be necessary in the problem solving process which we have described. Spivack and his colleagues in extensive studies of 4 to 5 year old children relating problem solving and mental health and behavioural adjustment have identified many relevant variables for the study of children's actual problem solving behaviour (Spivack & Levine, 1963; Shure & Spivack, 1970; Platt, Altman & Altman, 1973; Spivack & Shure, 1974; Shure, Spivack & Jaeger, 1975). Sensitivity to human problems, ability to conceptualize alternative courses of action, ability to identify the means of solving a problem, and sensitivity to consequences and causes and effects were skills deemed to be important in the problem solving process. Thus, means-end thinking, consequential thinking and social cause effect thinking are key variables to view in the study of problem solving behaviour. While these researchers found all of these skills related to behavioural adjustment, they note that the ability to conceptualize alternative courses of action is particularly important for the behavioural adjustment of 4 to 5 year old children. Spivack and his associates concluded that problem solving abilities are not a single ability but rather they are a grouping of abilities which are related to one another. In addition, these problem solving skills are not merely one component of intelligence or the abilities required to solve the impersonal, intellectual tasks found on an intelligence test; they are more generalizable to other situations. Smith and Roth (1959) studied problem solving skills in a similar fashion. They observed children's spontaneous problem solving behaviours as they related to awareness of the problem (recognition), exploration of the problem (seeking alternatives), trial

or approximation, modification of attempts toward the problem (action), persistent action, hypothesizing and testing (evaluation).

In contrast, Nelson and his colleagues (Nelson & Sawada, 1975; Bourgeois & Nelson, 1977; Nelson & Kieren, 1977; Bana & Nelson, 1977) found in the observation of young children in a variety of mathematical and physical situations that by the age of between 4 and 5 years most children were exhibiting behaviours which were constructive in terms of problem solution. Their technique, very similar to that used in the current study, appeared appropriate in terms of identifying salient child behaviour and in yielding usable data.

It appears from previous work that the observation of children's problem solving behaviour is possible and yields usable data. Such observation should attend to the step-wise process of human problem solving and certain problem solving skills. Previous research has indicated that recognition of a problem, generation of alternatives, evaluation of alternatives, awareness of consequences of action and determination of whether the goal has been obtained are relevant skills for an observation study.

Research Procedures

Sample

Sixteen children age 4 years, 6 months (4,6) 5 years, 6 months (5,6) attending a child development centre on a university campus comprised the sample used in this study. Complete data were obtained for seven boys and eight girls, the parents of whom were mainly university students.

The Setting

The children were interviewed individually in one of two rooms provided by the child development centre at Texas Tech University, Department of Home and Family Life. The child sat at a small table facing the interviewer. On the table were the materials used in particular problem settings as well as an audio tape recorder. A second researcher acting as an observer and recorder of various non-verbal subject behaviour was seated unobtrusively behind the subject. The subjects did not appear to react in any way to the presence of either the tape recorder or the observer.

The Interview Protocol

Five problem settings, three interpersonal and two mathematical-physical, were selected and developed for use in this study. The format of the protocol was derived from earlier work on marital problem solving by Kieren (1969) and Henton (1970). The interpersonal situations were selected on the basis of their relevance to real life problems for children of this age. The earlier work upon which the protocol was based focused on problem perception and alternative generation, each of which was built into the current problem settings. The physical settings of the mathematical-physical problems were an elaboration of those developed by Nelson and Sawada (1975) who studied the problem solving of children aged 3 to 8.

In all five settings, the children had physical materials which they could manipulate. In one of the mathematical-physical problems, the child was asked to transfer 12 cars from a shopping centre parking lot to three apartment buildings when there were a variety of available routes. In the second, the child was asked to build three cages and put 12 animals in the cages in such a way that there were an equal number of animals in all cages. The interpersonal situations involved common childhood problems, using two dolls as manipulatives. In one, the child was to imagine that he or she came upon a friend riding a "big wheel", the friend persisted in riding although the child wished to ride. A second involved having a friend appear when the child had a bag of candy. In the third a child hit his friend who went to tell a responsible adult.

In each setting, the story situation was described by the interviewer. For example, in the big wheel problem, the child was told:

> You went over to your friend's house to play. Your friend was playing with a brand new big wheel. You really want to play with the new big wheel. You look at it and think how much fun it would be to play with it. Your friend keeps riding the big wheel saying — "Boy is this ever fun!"

In order to assess **problem perception** in three of the situations (big wheel, hitting and the transportation problem), the child was asked:

"What is the problem here? Or what is wrong in this story?" Additionally, in these same three situations the child was asked a question to determine whether he or she could specify a **goal** for the situation. The question in the big wheel problem was:

"What do you want to do when this happens?" Following this question, the child was asked to list as many alternatives as possible via the question:

"What would you do in a story to solve the problem?"

Several probes were used to encourage the child to answer with as many alternatives as possible. The interviewer was instructed to probe several times even if the child's initial response was "I can't think of anything". The probes used were "what else could you do?", or "If you couldn't do that what else could you do?", or "Is that all?"

In order to assess the **child's evaluation skills** they were asked:

> Which one (list all alternatives mentioned by the child) is the best way to solve the problem? And, why do you think that one is the best?

To measure **consequential thinking** the child was asked two questions:

> If you do that, what will happen next? The second was a more specific question with regard to empathy. How would your friend feel if you did that?

Finally, to measure whether the child could determine **closure** by recognizing the solution of the problem he or she was asked:

"Have you solved the problem of the big wheel?"

The five problems selected for use in this study were developed from the results of a pilot study of nine problems on five children ages 4 years 6 months to 5 years 6 months in a nearby child care centre who were interviewed and observed by two researchers. The language used in the final interview protocol was based on the reactions of the pilot sample. In addition, it was decided that problems with strong moral overtones, such as taking an unattended quarter, were too difficult for the children to handle comfortably.

Thus, the final interview[1] consisted of five problem settings, two mathematical-physical and three interpersonal. The interviewer used a standard protocol of questions which were the same or parallel to the extent possible in the five

[1] The Interview protocol and transcripts are available from the authors.

settings. The protocol included a standard series of non-leading probes in order to elicit the maximum number and detail of responses from each child. This was done both to increase the reliability of the procedure and also to ensure that response numbers were not a simple consequence of verbal fluency of the subject. In addition, the repeated probes served to ensure to a certain extent, that each child understood the task at hand.

The parallel forms of the mathematical-physical and interpersonal protocols, although based on instrumentation in previous research, served a wider purpose. In order to test the relationship between a child's behaviour and these two kinds of settings it seemed important to make the situations as similar as possible except for content. The use of more than one of each type of setting allowed for the comparison of both within type and between type behavioural patterns.

Analysis

For purposes of analysis, a written verbatim transcript of each of the five problem settings for each subject was developed. This was augmented by the observer's notes on nonverbal behaviours on each of the settings. From these detailed transcripts a coded form of the behaviours of children was developed. This was done independently by two trained coders and redone until intercoder reliability reached a high level of agreement. Thus the research technique yielded reliably coded information which forms part of the basis of the discussion below.

Results

To what extent does the research technique yield information about various aspects of children's problem solving behaviours? The results of this study will be presented in terms of the quality of information generated about behaviours in problem perception, alternative generation, and evaluation phases of problem-solving. This section will also contain information about children's behaviours in these categories. In addition, interpersonal and mathematical-physical categories will be compared.

Problem Perception

Three of the setting's protocols provided the subject with an opportunity to give a problem perception response. For example, a child might say:

"I would like to ride the big wheel, but he keeps riding it."

Such a response contains both a goal statement and an unresolved blocking of the goal. There were only two such responses given by children. Nearly all of the responses to problem perception probes were in terms of the subject's own action, (e.g. "I want to ride", "I would get mad"). Thus, it appears that the problem perception probes elicited responses which were self oriented and showed the high degree of egocentrism typical of this age level. It appears that children have difficulty in responding to direct queries about problem solving. While the section below exhibits their capability to make solution moves, this method led to either conceptual or language problems in trying to obtain problem perception behaviours.

Alternatives

While problem description and elaboration proved difficult for subjects in this study, they were able to generate a large number of alternatives as seen in Table I.

TABLE 1

Subject's Alternative Generation by Situation

	Number of Alternatives						
Problem Situation	0	1	2	3	4	5	
Transportation	0	4	7	2	2	1	$\bar{x} = 2.3$, n = 16
Big Wheel	1	2	6	5	1	1	$\bar{x} = 2.3$, n = 16
Hitting	1	8	6	0	0	0	$\bar{x} = 1.3$, n = 15
Caging Animals	0	3	5	2	2	3	$\bar{x} = 2.8$, n = 15
Candy	0	5	4	3	2	1	$\bar{x} = 2.3$, n = 15

With the exception of situation 3, "hitting", between ⅓ and ½ of the subjects could generate more than two alternatives. Of these alternatives 89% were deemed feasible (they were possible responses to the situation at hand). The other responses were in the main fanciful in nature. Thus, it is concluded that children can identify with problem solving activity in these kinds of situations and are observably productive within them.

Evaluation

When probing exhausted a subject's alternatives, these alternatives were listed for the subject. The subject was asked to select the best of his or her responses and tell why it was best. Children were able to select a best solution in 93% of the possible situations and give pertinent reasons in 90% of these cases.

As a follow-up to evaluation probes in the three interpersonal settings, the child was asked what would happen next and how the other person in the setting would feel as a consequence of the best action. While the child had difficulty specifying consequences, if one lumps consequential and empathic consequences, 77% of the children could make such responses.

Settings Comparisons

There were a number of observed differences between the mathematical-physical and interpersonal settings. One obvious difference was time spent both in terms of range and mean times. The children spent an average of 4.5 minutes on each of the mathematical-physical problems compared with an average of 2.2 minutes on each of the interpersonal problems. This difference probably is best explained in terms of the actions of children. In the mathematical-physical problems, alternative generation in both situations involved physical manipulation (loading cars on the ferry, building animal cages in various ways). The dolls in the interpersonal problems mainly served a representative visual function and were manipulated in only a few instances. (That the dolls played a vicarious role is seen in the fact that children, especially boys, rejected non-androgynous dolls.)

It also is obvious that the kinds of responses and response behaviours differed between mathematical-physical and interpersonal settings. In the former, the acts of counting and geometric transformation were typical behaviours. In the

interpersonal problems, emotional reactions entered into the response patterns. However, both the quantity and style of response remained consistent for individuals across settings.

Discussion

Results

The results of this study are suggestive of hypotheses rather than conclusive in themselves. The hypotheses can be summarized as follows: Young children can react well in hypothetical problem solving settings and are capable of demonstrating a variety of alternatives. Children appear to be able to demonstrate behaviours which are parallel to stages in general problem solving, even if they do not see problems in a means-ends sense and are egocentric in their behaviour. This is particularly evident in alternative generation and evaluation behaviours. While the behaviour and associated thinking differs between mathematical, physical and interpersonal problems as suggested by Spivack and Shure (1974), the quantity of problem solving behaviour (see Table 1) and style of action in these two settings is a very similar. Thus, it would appear that children use different knowledge in different settings but their pattern of knowledge use is similar across settings. Thus, a statement that intellectual and interpersonal problem solving patterns are not correlated is too simplistic.

Methodology

The results of this investigation indicate that the method used is adequate to measure the variables outlined in this study, although problem perception observation needs improvement. In the main, the situations presented were relevant to the children and kept their interest throughout the interview with the exception of one child who left the interview after one question. The mathematical situations were designed to generate action and they did. The hitting problem, however, generated different responses than the other two interpersonal problems. This may be because it presented a moral dilemma or a breach of specified rules in the child care centre which caused some children to exhibit reserve in generating alternatives which were not socially acceptable. Perhaps this observation indicates that different problem solving skills, particularly with respect to generating alternatives, are needed when the range of acceptable alternatives is wide as opposed to narrow. One would therefore have to be more aware of the *rules* of the family and the child care systems to understand how these govern flexibility in alternative generation.

The structured and non-reactive interview technique had virtue in that it allowed children to respond without adult evaluation of their responses. Several questions, particularly those dealing with problem perception, goal statements and closure, were difficult for the child to respond to. Spivack and Shure (1974) have suggested that linguisitic skills may be an intervening variable in problem solving. The child's understanding of the word *problem* and *solved* should be assessed in future research.

Having a second observer was a reasonable substitute for video taping. However, this technique is subject to one strong limitation. The impression information generated by the observer deteriorated rapidly and would potentially be confounded by subsequent observations of other children. Hence, reliable information must be obtained from the observer during or immediately following the observation.

In addition, the whole interview situation appeared to represent a problem solving situation for the child. It was observed that children were, at least occasionally, attempting to determine what the interviewer wanted. Both interviewer and child were making attempts to control one another. While the interviewer's goal was to have the child complete the interview, the child's goal may have been very different (e.g. to finish as soon as possible, to gain attention from the interviewer, to play with materials). This more ecological approach including the study of the whole research situation as a problem for the child and the observer, should receive greater attention in future problem solving research. ●

References

1. Bana, J. & Nelson, L. "Some Effects of Distractions in Non-Verbal Mathematical Problems", Vol. XXIII, #4, *Alberta Journal of Educational Research*, Vol. 23, No. 4 (December, 1977), 268-279.
2. Bee, H. "Socialization for Problem Solving", In J. Aldous et al., *Family Problem Solving: A Symposium on Theoretical, Methodological, and Substantive Concerns.* Hinsdale Illinois: Dryden (1971), 186-220.
3. Bernstein, B. "Social Class and Linguistic Development". *Education Economy and Society.* Eds. A.H. Halsey, Jean Floud and C. Arnold Anderson, Glencoe: Free Press, 1961, 228-314.
4. Bourgeois, R. & Nelson, L. "Young Children's Behaviour in Solving Division Problems", *Alberta Journal of Education Research,* Vol. 23, No. 3 (Sept., 1977), 178-185.
5. Carkhuff, R. *The Art of Problem Solving.* Amhurst, Mass: Human Resources Development Press, 1973.
6. Hess, R. & Shipman, V. "Early Experience and Socialization of Cognitive Modes in Children". *Child Development* (1965), 35, 869-886.
7. Inhelder, B. & Piaget, J. *The Growth of Logical Thinking from Childhood to Adolescence.* New York: Basic Books, 1958.
8. Kaufman, R. *Identifying and Solving Problems: A System Approach.* LaJolla, California: University Associates, 1976.
9. Kieren, D., Henton, J. & Marotz, R. *Hers and His: A Problem Solving Approach to Marriage.* Hinsdale, Illinois: Dryden, 1975.
10. Kieren, D., Vaines, E. & Badir, D. *The Home Economist as a Helping Professional.* Manuscript in preparation, 1978.
11. McLaughlin, L. & Brinley, J. "Age and Observational Learning of Multiple Classification Cast". *Developmental Psychology,* 9 (1973), 9 - 15.
12. Moran, J. "Problem Solving Potential in Elementary School Children". *Child Study Journal,* Vol. 6 No. 1 (1976), 39-47.
13. Murphy, L. "Spontaneous Ways of Learning in Young Children". *Children,* Vol. 14, No. 6 (Nov. - Dec., 1967), 211-216.
14. Nelson, D. & Sawada, D. "Studying Problem-Solving Behaviour in Young Children — some Methodological considerations", *Alberta Journal of Educational Research,* Vol. XXI, Number 1, (March, 1975), 28-38.
15. Nelson, L. & Kieren, T. "Childrens' Behaviour in Solving Special Problems", *Alberta Journal of Educational Research,* Vol. 23, No. 1, (Feb., 1977), 22-30).
16. Platt, J., Altman & Altman, D. "Dimensions of Real Life Problem Solving Thinking in Adolescence Psychiatric Patients", paper presented at Eastern Psychological Association, Washington, D.C., 1973.
17. Smith, D., & Roth, R. "Problem Solving Behaviour of Preschool Children in a Spontaneous Setting". *Journal of Genetic Psychology,* 97 (1960), 139-143.
18. Spivack, G. & Levine, M. *"Self Regulation in Acting out a Normal Adolescence",* Report M. - 4531. Washington, D.C. National Institute of Health, 1963.
19. Spivack, G. & Shure, M. *Social Adjustment of Young Children.* San Francisco: Jossey-Bass, 1974.
20. Spivack, G., Platt, J. & Shure, N. *The Problem Solving Approach to Adjustment.* San Francisco: Jossey-Bass, 1977.
21. Shure, M. & Spivack, G. *Cognitive Problem Solving Skills, Adjustment and Social Class.* Research and evaluation report, Philadelphia Department of Mental Health Sciences, Hahnemann Medical College and Hospital, 1970.
22. Shure, M., Spivack, G. & Jaeger, M. "Problem Solving, Thinking and Adjustment among Disadvantaged Preschool Children". *Child Development,* (1971), 1791-1803.
23. Vaines, E. & Hernandez, P. *A Guide For Problem Solving: A Technique and an Orientation.* Vancouver: University of British Columbia, 1978.

Food Safety
I. Salmonella Food Poisoning*
A Role for the Home Economist

Michael E. Stiles

Food safety is an issue of considerable importance to the Canadian consumer. Of the potential hazards in foods, food specialists rank microbial hazards and nutritional problems far ahead of other concerns such as environmental contaminants, natural food toxins, agricultural residues (pesticides, herbicides etc.) and food additives (13, 14).

The principal reason for the high ranking afforded microbial hazards and nutritional problems is that most of the hazards associated with these problems originate in the home or in the food service trade. Almost invariably the food must be abused in some way for the hazard to develop — in the case of microbial hazards, improper handling that results in cross-contamination and/or lack of temperature control; in the case of nutritional problems, poor food choices or poor handling of foods that result in poor nutrition.

I like, and subscribe to the statement that: "there are no junk foods in the food stores, it is only the way that we handle and eat the foods that makes them junky!"

The role of the home economist as nutritionist or dietitian in nutrition problems is well established, though it is only in recent years that their involvement in "well person" nutrition has been in demand. In contrast, the role of the home economist in microbial and chemical aspects of food safety has, largely, been overlooked. In the past, the home economist was looked on for advice in methods of home preservation of foods, but as home preservation fell by the way-side, so the home economists' training in areas of applied microbiology diminished. With the resurgence of home preservation of foods, the demand for food safety information from home economists is increasing again. While this justifies increased involvement of the home economist in microbial aspects of food safety, I feel that the need for the home economist's involvement has been on-going. Todd's reports on foodborne diseases in Canada (23-25) indicate that mishandling of food in foodservice establishments or in the home accounted for 25% and 20% of the incidents of food poisoning in Canada, respectively. Bryan (7) reporting on data for the United States from 1973 to 1976, indicated that in food poisoning outbreaks where foods were known to be mishandled, 67.4% resulted from mishandling in foodservice establishments, and 26.6% from mishandling in the home.

These data should not be interpreted as indicating that food handling in food service establishments is worse than in the home. Food poisoning is a grossly under-reported disease. Although some forms of food poisoning outbreaks were reportable in terms of public health regulations in Canada, many cases of food poisoning go unreported, poorly reported or unconfirmed, or unrecognized as food poisoning. The most likely outbreaks to be reported are those where large numbers of cases occur, such as where many people eat food in a food service establishment. In contrast, the majority of cases in the home go unreported or unrecognized. More often than not, the so-called "24-hour flu" could be an outbreak of food poisoning — a mild *Salmonella* infection, a typical *Staphylococcus aureus (S. aureus)* or *Clostridium perfringens (C. perfringens)* intoxication. A transient condition, involving a range and variety of conditions: abdominal discomfort, malaise, diarrhoea, nausea and vomiting, that lasts up to 24 hours, but rapid recovery occurs so medical advice is not sought. The more severe the symptoms, the greater the likelihood that medical advice is sought, but even so, the confirmation of an outbreak of food poisoning might not occur, and reporting to public health authorities is not assured. Public health officials generally consider that less than 10% of food poisoning outbreaks are reported, and of those, as many as 70 to 80% are of unknown cause (25).

In general, for a case of food poisoning to occur, food must be mistreated in a way that allows the food poisoning bacteria to grow. *Salmonella, C. perfringens* and enteropathogenic *Escherichia coli (E. coli)* are generally considered to have to multiply to give an infective dose of 100,000 organisms to cause illness (6); while *S. aureus* must increase to 500,000 or more per gram before enterotoxin is detectable (5). It is not surprising, therefore, that up to 50% of microbial food poisoning is due to inadequate cooling of foods. The reasons for inadequate cooling include: foods left at room temperature; foods stored in large volumes in containers which slowed the cooling rate; and inefficient refrigerator units. In addition to inadequate cooling, the lapse of a day or

---

Dr. Stiles received his training in agriculture in the Republic of South Africa. He studied for the PH. D. degree in food microbiology at the University of Illinois at Urbana. Dr. Stiles has been a professor on the staff of the Faculty of Home Economics, University of Alberta, since 1969. He is also an honorary professor of microbiology.

* This article is the first of a series on food safety by Dr. Stiles.

more between cooking and serving a food; infected food handlers; inadequate cooking; inadequate hot storage; inadequate reheating; ingesting contaminated raw food; cross-contamination; inadequate cleaning of equipment; foods from unsafe sources; and using left-overs have been reported, in decreasing order of importance, as factors contributing to food poisoning outbreaks (7).

The principal form of food borne disease in Canada is Staphylococcal food poisoning, caused by toxins produced by certain strains of *S. aureus*. *Salmonella* species are generally the second most important agent in foodborne disease in Canada (23-25), and cause infection of the intestine. However, *Salmonella* food poisoning is a far more severe form of illness than Staphylococcal food poisoning, and infected persons can experience conditions ranging from mild food poisoning to death. Death is an extreme outcome of *Salmonella* food poisoning (salmonellosis), but the severity of salmonellosis can be sufficient to cause death in infants, the aged and the debilitated. Control of *Salmonella*, therefore, becomes even more important in hospitals, nursing homes, and other institutions, than in the home. No one in their right mind would want to experience a case of salmonellosis, yet *Salmonella* exist in our environment and in our foods. In a survey (Stiles, unpublished data) conducted in 1973 in Edmonton, Montreal and Vancouver, as many as 50% of 450 respondents indicated that they had no concept of *Salmonella* as a food hazard. Yet, public health authorities concede that at least 20 to 30% of poultry entering the market place are contaminated with *Salmonella*. In our survey, of those respondents aware of *Salmonella* as a hazard in foods, less than 4% associated *Salmonella* with poultry.

The purpose of this paper is to give the reader some background information on *Salmonella*, that will assist in advising food handlers on the control of salmonellosis.

Salmonella is a non-spore forming, facultative anaerobe to aerobic bacterium that grows between 7 and about 46°C (1). The fact that *Salmonella* do not form spores means that the organism cannot survive cooking traditionally used for the preparation of hot meals. The heating required to achieve an internal temperature of 70°C in a food would almost invariably be adequate to destroy any *Salmonella* organisms. The aerobic to anaerobic nature of the organism means that it can grow on foods in the presence of oxygen, or in food with a very much reduced level of oxygen. Finally, the growth range indicates that storage of foods in a refrigerator at 7°C or below, or keeping a cooked food hot, at 60°C or above will prevent growth and/or kill the *Salmonella*, respectively. The genus *Salmonella* consists of some 1,600 or more serotypes, but these are divisible into three main groups (2, 20):

- *Salmonella* specifically pathogenic to humans producing human typhoid *(S. typhi)* and paratyphoid *(S. hirschfeldii)*, causing generalized disease with septicaemia (blood stream invasion).
- *Salmonella* specifically pathogenic for animals, also causing gastroenteritis in humans.
- Nonhost-specific *Salmonella*, which include the vast majority of the 1,600 serotypes recognized today, causing gastroenteritis in humans.

While the incidence of typhoid fever salmonellosis has **decreased** markedly, the incidence of food poisoning salmonellosis has **increased** markedly (3). Although certain serotypes predominate in food poisoning salmonelloses, all types are considered capable of producing food poisoning symptoms (4).

Symptoms

The symptoms of food poisoning salmonellosis are variable, depending on the intensity of infection and resistance of the infected person. Onset of symptoms requires 6 to 72 hours, usually 18 to 48 hours after ingestion of a contaminated food containing an infective dose. This time lapse occurs because the infection of the small intestine has to develop. The duration of the disease varies from a few days to a few weeks. The symptoms include abdominal pains, diarrhoea, chills, fever, frequent vomiting, and prostration. Symptoms persist for one to seven days. In the event of a severe case, the organisms infect the circulatory system of the body, causing septicaemia, and infection of various organs occurs. Severe symptoms are seldom encountered in healthy adults, but can occur in the young or aged. After the symptoms of the disease have subsided, it is possible for infected persons to be asymptomatic carriers for periods of up to three months. Such carriers are capable of contaminating foods and causing outbreaks of salmonellosis. Although the mortality rate from salmonellosis is low (generally less than 1%), it is considered that up to 500 people die from salmonellosis in the United States each year (20).

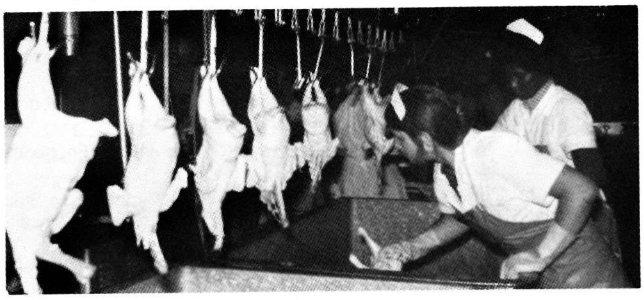
Foods Affected

Salmonellae may contaminate humans by direct human contact, by contamination from animals and reptiles (pets) to humans, or through foods and water (10). Foods are a major source of *Salmonella* infections. Egg and egg products, especially cracked eggs, have been implicated in salmonellosis outbreaks. Pasteurization of egg products, however, has markedly reduced the incidence of egg contamination. In contrast, the incidence of poultry meat contamination has increased. Contamination rates of up to 30% of carcasses are generally recognized in Canada (14), higher rates of 50% up to 100% of carcasses (samples) are considered and discussed (Stiles, personal observations and discussion with other food microbiologists across Canada). This, in part, attests to the widespread nature of *Salmonella* in poultry, but it might also be a function of improved methods of detection of *Salmonella* on poultry carcasses. When researchers and public health officials report the presence of *Salmonella*-positive poultry carcasses, they are simply indicating the detection of *Salmonella* on the carcass, not necessarily an infective dose. Theoretically, bacteriologists could detect as little as one *Salmonella* organism per carcass, and it would be reported as a positive result.

Other meats, such as pork and beef, are less frequently contaminated with *Salmonella* than poultry (8). Accepted estimates for pork sample contamination range from less than 5% to 20% or greater, and for beef samples, from less than 1 and up to 20 % (4, 22). In a Canadian study of the microbiology of ground beef at the University of Alberta (16), only one sample out of 312 ground beef samples was confirmed as *Salmonella*-positive using enrichment techniques that would detect *Salmonella* in 25 grams of product. The presence of *Salmonella* in beef has been confirmed in United States Center for Disease Control reports (9), and at high levels in pork (21.5%), and beef (11.1%), compared to only 7.3% in poultry (22). Duitschaever (11) in a Canadian survey of 69 packages of raw chicken pieces reported 34.8% of poultry carcasses were contaminated.

Poultry, in particular, but all meats in general should be

regarded as a potential source of *Salmonella*. Indeed, meats were associated with almost 25% of food poisoning cases, and poultry with another 26% of cases in Canada (25). Other foods associated with *Salmonella* food poisonings have been milk and milk products. Pasteurized milk should not become involved in such outbreaks because of the protective heat treatment, but raw milk could become involved, because *Salmonella* have been reported in raw milk (15). Cheese, milkshake, eggnog, cream and even spray-dried milk powder have been associated with *Salmonella* outbreaks (15). Pasteurized or properly heat processed dairy products, however, should not contain *Salmonella*. *Salmonella* are killed at temperatures about 60°C (1). Fish, fresh and smoked, dried cereal products, dried coconut, chocolate candy products, and shelled nuts have been implicated in *Salmonella* food poisoning outbreaks, but their occurrence in such foods is rare compared to meats, and insignificant in potential compared to raw milk. However, the main danger with rare sources is that they are frequently added to foods after the cooking process.



Source of Salmonella

Salmonella have become widely distributed in our environment, and it would be unlikely to find rivers, close to sewage disposal works, that are not contaminated with *Salmonella*. It is not difficult to imagine, therefore, the direct or indirect cycling of *Salmonella* back to food animals and back to our food supply (12). *Salmonella* in poultry and other farm animals is generally considered an agricultural problem. In poultry and young farm livestock, Salmonella is a major veterinary and economic concern (20). In adult animals, especially poultry, Salmonella can infect the intestinal tract without producing disease conditions, similar to the asymptomatic carrier condition in humans. Another important source of *Salmonella* in livestock is their feed. Animals held in close conditions during raising, and during transportation, are susceptible to becoming contaminated with and carriers of *Salmonella* (4, 20).

The food processing industry, receiving contaminated, but not "infected" animals would not be able to detect and differentiate these animals, except by intricate and impractical microbial methods. Such animals pass Health of Animals inspection as healthy animals, suitable for human consumption. If the food processing involves heat treatment, such as pasteurization of milk, cooking of processed meats, contaminating *Salmonella* should be eliminated, and considerable caution must be exercised to prevent cross-contamination after heat processing. In the analysis of some 200 samples of processed meats in Canada (18, 21) no cases of *Salmonella* were detected per 25 grams using enrichment techniques. However, in the case of unheated meats — poultry, pork, beef, etc. — entering the retail and foodservice trades, no protective heat treatment can be applied. In such products, the level of *Salmonella* in the product represents contamination at production, and the food processor cannot affect any controls. In this case, therefore, control relies on the foodservice trade and consumers handling contaminated products in their homes (4).

Control

The principal control of *Salmonella* in food centres around heat treatment. Heat treatment in the food industry, the foodservice trade and the home forms a safety barrier against viable cells in the raw food. This barrier is often broken, which accounts for human salmonellosis outbreaks. The principal causes for the barrier being broken are: cross-contamintion from uncooked (unprocessed) foods to the cooked food, and/or other cooked foods to be eaten without re-heating; inadequate cooking (processing) of contaminated foods; improper handling or storage of foods. Other possibilities exist, but these represent the major problems that food handlers experience in control of *Salmonella* food poisoning.

Cross-contamination.

The classical case of cross-contamination from raw to cooked foods occurred with barbecued foods in retail food stores (26). These products became very popular, but they were produced under conditions that were not ideal for hygienic and controlled handling of the product. It was difficult to separate raw and cooked product, so cross-contamination of the cooked product occurred. Furthermore, storage temperatures after cooking were frequently inadequate to control *Salmonella* growth. Todd and Pivnick (26) cited 62 outbreaks of food poisoning associated with barbecued foods, some of which occurred in Canada. This lead the Canadian Health Protection Branch to introduce legislation in terms of the Canadian Food and Drugs Act and Regulations (B.14.072) that requires all barbecued, roasted or broiled meats offered for sale to be held:

"(a) at all times
(i) has a temperature of 40°F (4.4°C) or lower, or 140°F (60°C) or higher".

In terms of *Salmonella* control this is good advice for the food handler in the home.

Inadequate Cooking

The classical case of inadequate cooking occurs in products such as "steak tartare", in which raw steak is served to consumers. The risk of salmonellosis is obvious, and in all cases of salmonellosis from hamburger reported by the U.S. Center for Disease Control (9), affected persons consumed raw or rare hamburger. The other common instance for inadequate cooking is with poultry, especially turkey, in particular if the body cavity is stuffed with a dressing. In the food service trade the risk of surviving *Salmonella* in the dressing is such that it is recommended that poultry dressing be cooked separately. In the home this represents a safe practice, but it is not always acceptable from a traditional or a practical standpoint. If turkeys are stuffed in the traditional manner and cooked, the measure of doneness should be determined by a meat thermometer in the centre of the stuffing rather than in the thigh meat, and internal temperatures should reach a minimum of 65°C (17).

Summary

Salmonella is a severe form of food poisoning that results in most cases from mishandling of the food in the foodservice trade or in the home. Hence, the home economist can play an

important and specific role in the control of *Salmonella* food poisoning outbreaks. Even if agricultural production could reduce contamination levels of poultry to as low as 5%, controls would still be necessary because *Salmonella* is unlikely to be eliminated from our environment. Control centres around avoidance of cross-contamination from raw contaminated foods or contaminated surfaces; adequate cooking of foods that might contain *Salmonella;* and storage of cooked foods above 60°C or below 4.4°C (refrigerated) prior to consumption.●

REFERENCES

1. Angelotti, R., M.J. Foter, and K.H. Lewis. 1961. Time-Temperature Effects on Salmonellae and Staphylococci in Foods. III. Thermal Death Time Studies. Applied Microbiology *9*:308-315.
2. Bergey's Manual. 1974. Bergey's Manual of Determinative Bacteriology R.C. Buchanan *et al.* (eds.). The Williams and Wilkins Co., Baltimore.
3. Bowmer, E.J. 1965. Salmonellae in Food — A Review. J. Milk Food Technology *28*:74-86.
4. Bryan, F.L. 1968. What the Sanitarian Should Know About Staphylococci and Salmonellae in Non-Dairy Products. II. Salmonellae. J. Milk Food Technology *31*:131-140.
5. Bryan, F.L. 1976. *Staphylococcus aureus*. In M. deFigueriredo and D.F. Splittstoesser (eds.) Food Microbiology: Public Health and Spoilage Aspects. AVI, Westport, Connecticut.
6. Bryan, F.L. 1977. Diseases Transmitted by Foods Contaminated by Wastewater. J. Food Protection *40*:45-56.
7. Bryan, F.L. 1978. Factors that Contribute to Outbreaks of Foodborne Disease. J. Food protection *41*:816-827.
8. Center for Disease Control 1975. Current Trends. Microbiologic Standards for Raw Ground Beef, Cold Cuts, and Frankfurters. Morbidity and Mortality Weekly Report *24*:229-230.
9. Center for Disease Control. 1975. Salmonella newport Contamination of Hamburger: Morbidity and Mortality Weekly Report. December 27, 1975. 438, 443.
10. Committee on *Salmonella*, National Academy of Sciences — National Research Council. 1970. An Evaluation of the *Salmonella* Problem: Summary and Recommendations. J. Milk Food Technology *33*:42-51.
11. Duitschaever, C.L. 1977. Incidence of *Salmonella* in Retailed Raw Cut-up Chicken. J. Food Protection *40*:191-192.
12. Edel, W., P.A.M. Guinee, M. van Schothorst, and E.K. Kampelmacher. 1973. Salmonella Cycles in Foods with Special Reference to the Effects of Environmental Factors, Including Feeds. Canadian Institute Food Science Technology J. *6*:64-67.
13. Hall, R.L. 1973. A Modern Three R's — Risk, Reason, and Relevancy. Canadian Institute Food Science Technology J. *6*:A17-A21.
14. Hall, R.L. 1977. Safe at the Plate. Nutrition Today *12*:6-31.
15. Marth, E.H. 1969. Salmonellae and Salmonellosis Associated with Milk and Milk Products. A Review. J. Dairy Science *52*:283-315.
16. Ng, L.-K., and M.E. Stiles. 1978. Enterobacteriaceae in Ground Meats. Canadian J. Microbiology *24*:1574-1582.
17. Nickerson, J.T. and A.J. Sinskey. 1972. Microbiology of Foods and Food Processing. p. 203. American Elsevier Publishing Co., Inc., New York.
18. Paradis, D.C., and M.E. Stiles. 1978. A Study of Microbial Quality of Vacuum Packaged Sliced Bologna. J. Food Protection *41*:811-815.
19. Pivnick, H. 1970. Salmonella in Poultry Products. Canadian Institute Food Technology J. *3*:A50-A51.
20. Prost, E., and H. Riemann. 1967. Food-borne Salmonellosis. Annual Review of Microbiology *21*:495-529.
21. Stiles, M.E., and L.-K. Ng. 1979. Fate of Enteropathogens Inoculated onto Chopped Ham. J. Food Protection *42*:624-630.
22. Swaminathan, B., M.A.B. Link, and J.C. Ayres. 1978. Incidence of Salmonellae in Raw Meat and Poultry Samples in Retail Stores. J. Food Protection *41*:518-520.
23. Todd, E.C.D. 1976. The First Annual Summary of Food-borne Disease in Canada. J. Milk Food Technology *39*:426-431.
24. Todd, E.C.D. 1977. Food-borne Disease in Canada — 1974 Annual Summary. J. Food Protection *40*:493-498.
25. Todd, E.C.D. 1978. Food-borne Disease in Canada — 1975 Annual Summary. J. Food Protection *41*:910-918.
26. Todd, E., and H. Pivnick. 1973. Public Health Problems Associated with Barbecued Food. A Review. J. Milk Food Technology *36*:1-18.

Culture, Food — and the Canadian Home Economist

Thelma Barer-Stein

Abstract

Reflection on the cultural implications of all aspects of food requires some understanding of the meaning of both culture and food. Home economics as a discipline and a profession is profoundly concerned with increasing the quality of daily life. There is no question that food plays a central role in each person's daily life, and while most courses of study and professional routines give consideration to the pragmatic aspect of food consumerism and nutrition, the fact of the presence in Canada of more than one hundred distinctive ethnocultural groups points out the importance of more than mere cursory attention to food's cultural roots. The Canadian home economist has both the motivation and the opportunity to enhance Canadian daily life through empathetic understanding of the cultural aspect of food.

Résumé

La réflection sur les implications culturelles de tous les aspects de la nourriture demande une certaine compréhension de ce que signifient à la fois la culture et la nourriture. L'économie familiale, en tant que discipline et profession, se soucie profondément d'améliorer la qualité de la vie quotidienne. Il n'y a aucun doute que la nourriture joue un rôle majeur dans la vie quotidienne de chaque individu, et, tandis que la plupart des cours d'études et du travail professionnel courant prennent en considération l'aspect pragmatique de la consommation de la nourriture et de la nutrition, la présence au Canada de plus de 100 groupes culturels distincts souligne le fait que les racines culturelles de la nourriture méritent plus qu'une attention superficielle. L'économiste familial canadien a à la fois la motivation et l'occasion d'améliorer la vie quotidienne des Canadiens en comprenant et sympathisant avec l'aspect culturel de la nourriture.

Thelma Barer-Stein has a B.H.E. (U.B.C.), R.P.Dt. (Toronto General Hospital), M.Ed. (U.W.O.) and is presently a Ph.D. candidate in the Department of Adult Education, University of Toronto, Ontario Institute for Studies in Education and author of *You Eat What You Are.* Toronto: McClelland & Stewart, 1979, 620 pp.

This manuscript/project was supported by The Toronto Nutrition Committee, Canada Council Explorations, Ontario Arts Council and the first Wintario grant to an author.

If we can assume that one of the most important goals of the home economist is the improvement of the quality of daily life, then we probably further assume that any focus on the subject of food must be important too. Home economists certainly do acknowledge the central part of food in any person's daily life: selecting and buying food, storing and preparing it. The whole matter of food takes a big chunk out of anyone's budget — whether it is time or money. Food is not only big business: food is crucial to human survival. But while we zero in on agriculture, economics, additives and nutrients and puzzle over the pros and cons of diets, behaviour modification programs and food analogues — one vital question is seldom considered: Why do people eat what they eat?

What is Food?

What a question! Anyone knows that food is what we eat. That much is clear, but why is it that we consider certain things edible and other things not? Why are some things considered to be mouth-watering delicacies and others repulsive? How would you feel if your morning coffee were replaced with a cup of strong tea afloat with melted butter? Would you be satisfied to down a small bowl of cold noodles and sharp mouth-puckering pickles?

How can we explain the fact that people starve to death rather than eat edibles in the form of insects or animals or even plant life that seem either strange or may be unknown to them? We like to point accusingly to the image of India's sacred cows wandering the roadways while hungry people pass by. But there are also hungry people in Canada, totally unaware of wild plants and animals and even some insects that are edible and nourishing. But even if they were aware, would they really make use of cattails, rabbits and certain grasshoppers? Would you?

Clearly, then, we cannot simply define food as that which is edible. We do not always consume that which is edible, even though it may mean life itself. But we do consider our food to be that which is available to us, and which we *consider* to be edible.

But food is not just a matter of availability and edibleness. Consider a chicken. What a difference in flavour, texture and appearance from a chicken prepared in a Mexican kitchen, a Japanese kitchen, or a German kitchen! The chicken would not even be in a Muslim or Jewish kitchen unless it was first killed in a ritually religious manner: and in the kitchen of a Seventh Day Adventist or Zen Buddhist there would be no chicken at all, for meat is not used. Following the chicken to the table, we may be surprised to see it eaten with swiftly delicate motions of the right hand only, or plucked from a

serving platter with chopsticks, or even slashed with a flash of a knife and stabbed with the prongs of a fork.

Clearly, we cannot survive without food, but if in some cases, we would rather die than eat certain morsels which we do not consider to be fit to eat, then there is some mystique about the matter of food.

More than just a tool for our survival, we also know that food gives us pleasure, and when we share that pleasure with others, we realize that food plays a large role in hospitality, in socializing, in the celebration of special occasions. There are certain foods that seem to make a holiday special, there are also certain foods considered an integral part of weddings and even funerals. But who eats what, and when?

What is Culture?

There must be a reason for the fact that many of the questions posed above are seldom considered. While we do spend conscious time in considering the selection and preparation of food, we select within certain defined boundaries; so too, our cookery methods and the way we serve and eat our food follow the limitations of certain patterns that are very familiar to all of us. The meat we buy is going to be cooked; the cereal grain we use will not be pounded in a mortar and pestle. But many peoples prefer their meat to be raw and many people consider the first step of grain preparation to be the lengthy pounding that results in a smooth mash. Why is there a difference?

We know that the matter of eating food is seldom so simple as to satisfy hunger or to provide nutrients. The act of taking food is, in fact, deeply embedded in intertwining threads of emotion, status, myth, and often religious threads as well, that combine to form the fabric of our cultural heritage.

People neither select nor prepare or eat food in a haphazard manner: every aspect that surrounds the selection, preparation and serving and eating of food is in fact deeply bound in established tradition. And it is the individual tradition that determines for each person what is right in the matter of food.

Defining culture is no simple matter either. More than a 1,000 definitions exist, and they may be formulated with emphasis on one's interest or profession. Economists may view cultures in terms of technology or the lack of it; geographers may view cultures as locally-based (drawing resources from limited area) or as a world-wide system (drawing on all the earth's resources). Anthropologists themselves vary in their views from seeing culture as a system of patterns and symbols to defining it as the sum total of daily life of a given group of people.

What can be said is that culture is the way of life of a society: it is human living that makes culture. We cannot ignore the individuality of any given society, yet it does seem possible to distinguish societies by their cultures which seem to be based on a consensus of lifestyles, priorities, ethics and morals. Since these patterns seem to have proven themselves, they are considered worthy of transmission to the next generation. But this very communication of patterns, symbols and values is seldom an overt process; rather it is one of subconscious emulation.

Black peoples have coined the term *soul food*. But every person has soul food. It is the particular food or the specially prepared dish that even the mere thought of, can bring nostalgic mouth-watering reminiscences. Soul food evokes the warmth and security of home and family, and loving special occasions. Your mother never set a dish in front of you and said, "This is your soul food, now don't forget it!"

But the conscious or subconscious consensus and transmission of behaviours, values and patterns are only two of many factors common to all cultural groups. Gradual accumulation of ideas and practices, with some having priority over others is also a cultural factor of importance. Further, like the humans themselves, there is a constant ebb and flow of change: culture is not only cumulative, transmittable and the result of group consensus, it is also dynamic.

It has to be. Cultural patterns survive because they fill a need, serve a purpose. But it should be noted that it is also possible that what may have been needed or purposeful at one time, may at a later time, be relegated to the vague category of *custom* or *tradition*. But there is a purpose in preserving custom and traditions too: they serve the valuable purpose of identifying the cultural group, and they often serve the more pertinent need of helping us to identify ourselves.

Consider the fact that ethnicity is not just what we identify for ourselves, it may also be what others identify for us. In other words, ethnocultural labels may be imposed from within the group or from outside the group. You are what you are as much by your own identification as by what others consider you to be.

Verbal and behavioural responses, rhythm of body movements and gestures, concepts of time and of space — all are inherent in our cultural customs and traditions. Why does father sit at the head of the table? Why do women eat separately from men? Why is soup served in some cultures at the beginning of a meal, in others at the end and in still others, several times between the courses throughout the meal?

The perplexing answer to probing questions of custom and tradition are probably long lost, and persistent probing will bring an answer like: *"Because. That is the way we do it."* We have inherited our culture just as surely as we have inherited the color of our eyes. Yet there is a difference: we cannot change the color of our eyes but we can, albeit with great difficulty — change our values and behaviour. Perhaps the difficulty comes from the great depth of cultural inheritance, perhaps it comes from the fact that we are unaware of our cultural traits. Yet it is cultural heritage that helps us determine and to shape our daily lifestyles, prioritize our preferences. Thus culture helps us select what we eat, how and why and even when and where we eat what we eat.

For the most part, in this consideration of the meaning of culture and its effect upon food customs, we have been considering ethnocultural factors. But we must be aware that while many factors can be attributed to cultural groups, to ethnic groups — human individuality plays an important role. The manners of eating, the consideration of what to eat and when and how it will be eaten will be quite different when one also brings into consideration the complexities of age, socio-economic status, occupation and even the stage of development of the individual. The elderly Greek grandmother's needs and preferences will be quite different from the Greek teenage girl, even though both are Greek. Similarly, food patterns of the single working woman are quite different from those of the logger.

Why Do People Eat What They Eat?

We have considered the meaning of food and have determined that it is not just merely what is available nor is it

merely that which is edible: food is what is available and considered to be edible. And in trying to separate the factors that seemed to make one type of food *more edible* than another, we found that food customs, traditions and preferences were deeply intertwined in cultural mores. Food is more than a means of survival, it is fraught with symbolism, with status, with myth and emotion.

There is no doubt that all aspects of food are touched profoundly with deep cultural roots. It is interesting that individuals always feel that there is nothing strange or unusual about the food they prefer to eat, or how they cook it (or whether they cook it) or even how or when they eat it. We each feel that the way we eat is right. But we are aware that others have some strange customs!

> It is possible that in focusing on the "strange ways" of others we may fail to reflect on our own entrenched and indelible food customs. But such reflection is invaluable to understanding. It is also possible that we really are what we eat — physiologically — but because each of us is a part of an ethnocultural heritage, it is even more probable that ***we eat what we are.*** (Barer-Stein, 1979)

Being aware of the complexity of food preferences and customs, should make us more sensitive to the real difficulties inherent in any attempt to make changes in something that is so deeply rooted. A traditional Russian husband will be very proud of his wife's plumply-rounded figure, to him it indicates that he is successful enough to feed her well. How will you, the home economist help that family to realize the problems of obesity without impinging on their pride? Can you explain to a traditional Dutch family that while bread is important (as a symbol of hospitality and plenty), it is also necessary to be aware of limiting amounts eaten? Can you take considerations of the rules of Kashruth, yet help provide a Jewish family with well-balanced menus?

People eat what they eat because that is the way it was done in their family's home. They also eat in a particular way because of constraints of time, budget and the mood they are in. Home economists are more familiar with occupational and budgetary considerations than they are with ethnocultural factors.

Why Should Food and Culture be a Concern to Canadian Home Economists?

Probably at this point, the answer may be clear, for if one of the most important goals of the home economist is the improvement of the quality of daily life, then there can be no doubt that empathetic understanding of the cultural aspect of food customs must be a priority. Quality of life is certainly affected by nutrition and by wise consumerism. No matter whether the profession of home economics focuses on teaching, on counselling, or in business or industry, the Canadian home economist must be concerned with ethnocultural differences.

Many factors have recently converged to make Canada's multicultural reality of major interest. While Canadian history reveals many stages of coping with *foreigners* and *immigrants* from policies of assimilation to the present-day policy of multiculturalism, the generations of newcomers themselves have gone through stages. The first generation's prime concern is always the basics of survival: a job, a home and food. The second generation felt that most importantly, they wanted to belong to the new society and so they often expressed shame for the *strange customs and stumbling language* of their parents. The third generation, having survived and belonged, found themselves with increased affluence and increased leisure time: time to consider life goals and personal identity: to consider "who am I and where am I going?". Seemingly to coincide with this generation's perplexing quests, the later influx of immigrants to Canada, unlike those at the turn of the century, were mostly professionals and intellectuals escaping from political and religious persecution. Respect and admiration for this latter group helped to infuse the others with a renewed sense of the richness of their past traditions and their nostalgia, together with official government encouragement, found expression in ethnic festivals, the opening of ethnic restaurants and the spreading of multilingual papers, books and radio stations. *Ethnicity was in.*

Presently Canada is home to more than 100 ethnocultural groups: each proudly claiming their cultural heritage and just as proudly considering themselves Canadians. Thus to attempt a definition of *Canadian* or of *typical Canadian food* is more difficult than it may appear. Does one consider local food availability, long-standing historic usage, or local specialities, if any? Is cheddar cheese Canadian, or is it English? Is salmon a Canadian delicacy or is it Scandinavian? Look down any Canadian main street: in the definition of *Canadian food customs* how would you define the ubiquitous German Delicatessen, the Italian Pizza Parlour, the Chinese Food Restaurant?

If it is true that Canadians are moving from consumption to conservation, the Canadian home economist may do well to study deeply the way the Czechs make use of every breadcrumb, the ingeniously delicious meals based on vegetables and whole grains that are so much a part of Middle East Cookery, and the satisfyingly hearty Austrian soups made without meats. The fact that most peoples of the world have lived for many generations with tightly-limited incomes and resources but have used their ingenuity to create healthful and economical meals should be the starting point of serious study.

If it is true that Canadians are truly multicultural, then home economists should be leading the way in studying how culture affects daily life in every way, and certainly in food customs which are so much a part of that daily life and lifestyle.

Culture and food are intrinsic to the quality of the life of every Canadian, and with more than 100 different ethnocultural groups being a part of Canada and the Canadian way of life, the Canadian home economist has both the motivation and the opportunity for first-hand study and empathetic enriched understanding ●

References

Barer-Stein, T. *You eat what you are.* Toronto: McClelland & Stewart, 1979.

Bohanan, P. *The curse of culture.* (Publication #133). Boulder, Colorado: Social Science Consortium, 1971.

Bohanan, P. *Final report: A preliminary review of the intercultural dimension in international intercultural education grades K-14.* (Publication #156). New York: Social Science Education Consortium, 1972. (HEW-USOE # OEC-0-72-5152)

Hall, E.T. *Beyond culture.* New York: Anchor Press, Doubleday, 1976.

Keen, S. *Eating our way to enlightenment.* Psychology Today, 1978, 62-87.

Tannahill, R. *Food in history.* New York: Stein & Day, 1973.

Walsh, J.E. *Intercultural education in the community of man.* Hawaii: The University Press of Hawaii, 1973.

Professional Development: A Proposal for Canadian Home Economists

Eleanore Vaines
School of Home Economics
University of British Columbia

Summary

Professional development is defined in this paper as a dimension of the field of home economics which focuses on the practice of home economics by qualified home economists. The proposal suggests that if professional activities were clearly defined and organized, professional development could be a useful category for Canadian home economists. The proposal presents one way in which this might be done.

Sommaire

Le développement professionnel est défini dans cet article comme la dimension du domaine de l'économie familiale qui se concentre sur la pratique de l'économie familiale par des économistes familiaux qualifiés. La proposition suggère que si les activités professionnelles étaient clairement définies et organisées, le développement professionnel pourrait devenir une catégorie utile pour les économistes familiaux du Canada. La proposition présente une possibilité selon laquelle ceci peut se réaliser.

Dr. Eleanore Vaines has been a member of the faculty of the School of Home Economics at the University of British Columbia since 1964. She has a B.S. from the University of Washington (Seattle), M.S. from Cornell and a Ph.D. from Michigan State University. Her teaching and research are concerned with the area discussed in this paper and she is presently the chairman of the Canadian Home Economics Association Professional Development Committee.

The term professional development is used in many ways and has come to have an array of meanings. It is used, for example, to describe professional education, program development, accreditation, leadership training, some aspects of accountability, and certain types of publications. While all of these and more might be put under the category of professional development, there is at present no explicit criteria for doing so. I intend to suggest this situation can be rectified through this proposal on the assumption that the area of professional development could be a useful one if it were properly defined and organized. It could better meet the needs and demands of both pre-professional and professional home economists for such purposes as socialization, maintenance, promotion and re-entry. Therefore, the goal of this organizational proposal is to suggest a structure which will make it more feasible for professional development as it exists to flourish and, over time, achieve its overall purpose.

Marjorie Brown and Beatrice Paolucci in their recent paper, *Home Economics: A Definition,* (Brown & Paolucci, 1978) commissioned by the American Home Economics Association have noted that the field of home economics is composed of two separate yet interrelated dimensions: home economics as an area of study and home economics as a profession. Home economics as an area of study is that dimension of the field which has been defined as:

> The study of the laws, conditions, principles and ideals which are concerned on the one hand with man's immediate physical environment and on the other hand with his nature as a social being, and is the study specially of the relation between those two factors . . . In forming a complete definition . . . it may be possible to consider home economics as a philosophical subject, i.e., a study of *relation,* while the subjects on which it depends, i.e., economics, sociology, chemistry, hygiene and others, are empirical in their nature and concerned with *events* and *phenomena* . . . home economics . . . [is] primarily a study of connections and relations between certain phases of man's nature. (Lake Placid Conference Proceedings, 1902, 70-71).

Beatrice Paolucci recently added:

> Although the basic definition of the nature of the field remains essentially the same, the emphasis today is placed on the "reciprocal influences (interaction) between human behavior and the material substances". The approach is . . . a search for understanding and controlling the mutually sustaining relationship that couples man with his environment. (Paolucci, 1970, p. 3)

Home economics as an area of study, in summary, includes a knowledge base, the tools or processes necessary to acquire and elaborate the knowledge base through research efforts, and the end or mission of the field which acts as a guide to all these activities.

This is different from home economics as a profession. Professional activities are concerned with what home economists as home economists should do with what they know (Brown & Paolucci, 1979). This dimension consists of a knowledge base, the tools or processes which are used to translate the knowledge into practice, the composite of competencies necessary to fulfill the professional role, and the end or mission of the field which guides all these activities. Thus home economics as an area of study and home economics as a profession share (1) aspects of the field's knowledge base; (2) appropriate tools or processes and (3) the mission.

Professional development represents home economics as a profession. So for the purpose of this discussion the following tentative definition will be used:

> *Professional development* is a dimension of the field of home economics which focuses on the practice of home economics by qualified home economists.

In essence, the translation of home economics as an area of study into human services by home economists involves a theory - practice relationship which is guided by the end or mission of home economics. Two of the basic premises of professional development are also the goals of professional activities: (1) to benefit society through providing socially responsible services and (2) to promote and maintain knowledge and processes which will optimize consistency between the translation of home economics as an area of study and home economics as professional service.

This definition is elaborated in the remainder of this article, and such questions as "Why is such an area important to the evolution of home economics?", "What might be included?" and "How could professional development be more systematically organized?" are considered.

Some Assumptions of Professional Development

There have evolved some implied assumptions about the professional practice of home economics. One, for instance, is the unspoken belief that students who have acquired the knowledge base will naturally be capable of delivering the related human services. While research is limited, Combs and associates have found that knowing is only one part of being an effective helper (Combs, Avila & Purkey, 1971). Nutritional knowledge, for example, does not assure effective professional assistance. Helping individuals and families eat adequately is a multi-faceted problem, requiring the professional helper to use and synthesize many kinds of knowing and doing.

It has also been assumed that a professional's competence was acquired through obtaining a degree and on-the-job experience. But a person may have the proper credentials and a responsible position and yet not be optimally fulfilling his or her role. This is being recognized now in some professions as evidenced by their using a form of licensing or a point system which makes continued learning a mandatory part of continued practice.

It is clear that practicing a profession with excellence requires continual development of both the individual as well as the organizations which represent the profession. An organized professional development system could be one means of facilitating the continual growth of every aspect of the home economics profession.

Before suggestions can be made about what could be included under professional development some of the underlying assumptions which are basic to the proposal need to be made explicit. They are as follows:

- Home economics is one of the human service fields which means that the goal of home economics is to provide professional services to benefit society (Brown & Paolucci, 1978, pp. 12-13). It also means home economics is a problem oriented field rather than subject matter centered and requires the practitioner to integrate knowledge and processes in order to deliver human services.
- Home economics is a unique field. It is because of (a) its history, (b) "the formulation and ordering of knowledge for the problems which the profession is to attempt to solve in providing service" (Brown & Paolucci, 1978, pp. 23-24), and (c) the mission of the field.
- Home economics is a profession, i.e., it meets the following criteria:
  - *A profession is oriented toward providing service . . . beneficial to society.*
  - *The service involves intellectual activity, including practical judgment, which requires that the professional master theoretic knowledge related to the work situation.*
  - *Organization within the occupation is such that members seek to assure that work within the profession is morally defensible both in nature and in the quality of performance.*
  - Because the level of competence and independent thought required in practice, the scope and purpose of the profession is necessarily limited (Brown & Paolucci, 1978, pp. 12,13,17-18).
- It follows from this that home economics as a profession includes intellectual, ethical and pragmatic activities. (Brown, 1977; Brown & Paolucci, 1978)
- All of the activities of the field are guided by the mission of the field (Larson, 1974). A field's mission, among other things, sets boundaries for professional activities, offers direction, guides the development of priorities and gives context to the services provided. Recently there have been a number of mission statements. (Bivens, Fitch, Newkirk, Riggs, St. Marie, & Vaughn, 1975, pp. 26-27; American Home Economics Association, 1976, p. 38; Brown & Paolucci, 1978, pp. 46-47)

  The following is another version:

  The mission of home economics gives meaning and direction to the delivery of human services by home

A Proposal for Professional Development

<table>
<tr><th>Organizational Level</th><th>Suggested Goals for Professional Development</th><th>Some Means for Achieving the Goals</th></tr>
<tr><td>Level I:
Pre-professional (In teams and as individuals)</td><td>To gain an understanding of philosophy, theory, research, and processes related to the practice of home economics (See content suggested in Level II).

This goal implies that the student needs to acquire a basic understanding about the field of home economics and their role as a home economist which would include developing attitudes, and gaining experiences as well as acquiring knowledge.

To know, to know why, and to know how to translate the study of home economics into professional service.

This goal implies that by the time the pre-professional has completed their initiation they will have a sound basis on which to build their professional practice.</td><td>Curriculum: course work, simulations, field work.</td></tr>
<tr><td>Level II:
The practicing professional (individual)</td><td>To achieve role competency in particular settings: Acquiring knowledge, attitudes and practices related to:

1) The philosophy of human service fields and home economics in particular.
2) Life-long learning for personal and professional renewal, maintenance, promotion, for re-entry purposes and professional excellence. This aspect potentially includes all related knowledge, tools (or processes) to translate knowledge into practice, self-development opportunities, and role competency experiences.
3) Ethical practice.
4) Issues which are a part of home economics and associated to home economics. Helping clients become responsible conservers is one of the important issues facing society today, for example, and is directly related to the well-being of individuals and families.
5) Research which optimizes the practice of home economics and facilitates the theory — practice relationship consistent with the mission of the field.</td><td>Credit and non-credit courses in formal and informal settings.

Reading, professional experiences (including responsible commitment to group actions and tasks, team work and cooperative research).</td></tr>
<tr><td>Level III:
The collaboration of local and national organizations</td><td>To maintain, promote and monitor ethical excellence for all members of the social system by utilizing appropriate systems of action through:

(1) Accountability Systems
These systems might include accreditation; licensing; financial commitments; ethical behavior.
(2) Educational Systems for life-long learning related to the study and practice of home economics.
These systems focus on both content and processes and include conferences, workshops, scholarships/fellowships, and so forth.
(3) Leadership Systems which encourage the fulfillment of the profession's mission both within and in areas related to home economics.
These systems might include use of professional research; legislation; intra and inter-professional commitments, government involvement at all levels, innovations which promote the field's mission.
(4) Publication Systems which help home economists keep up-to-date and provide a service for clients.
These systems might include scholarly journals, pamphlets/bulletins, newletters and so forth.</td><td>Committees, task forces etc.

Publications for many different audiences.

Public relations within the social system and with outside groups.

Conferences, workshops etc.</td></tr>
</table>

economists to individuals and families. The mission is to help clients optimize their chosen life style in keeping with the broad principles of social responsibility to other global citizens. (Vaines, 1978)

These assumptions are the foundation on which this proposal is based.

Professional Development: A Proposal

The professional aspects of the field are multi-faceted and, therefore, it is necessary to synthesize from many areas (Brown & Paolucci, 1978). Professional action requires specific knowledge, attitude and practice components to facilitate the full potential of the theory - practice relationship. The **goal of professional development** is to facilitate this relationship in sound and imaginative ways so that all the parts of the complex field of home economics are consistent with its mission. Thus professional development could potentially meet the needs of the (1) pre-professional, who is in the process of being initiated, (2) the individual professional who practices in their unique setting, and (3) professional groups.

The proposal which follows is presented as an outline of *suggested* goals and how these goals might be achieved.

The suggested structure and general goals for professional development are outlined as means of achieving the field's mission. The proposal is presented with the hope that the following can be achieved: (1) to promote an orientation of cooperation between all levels of the profession in Canada, (2) to encourage consistency between the intellectual, ethical and pragmatic activities of the field, and as a result (3) encourage professional excellence.

What this proposal is about is already happening to some extent. The proposal could be a way to provide a more formal structure to insure that what is happening now will continue to systematically evolve in the future •

References

American Home Economics Association. Mission statement and program of work, 1976-1980. Approved by Assembly Delegates, July 1, 1976. *Journal of Home Economics,* September 1976, *68,* 38.

Bivens, G., Fitch, M., Newkirk, G., Paolucci, B., Riggs, E., St. Marie, S., & Vaughn, B. Home economics — New directions II. *Journal of Home Economics,* 1975, *67,* 26-27.

Brown, M. *A conceptual scheme and decision-rules for the selection and organization of home economics curriculum content: Wisconsin home economics curriculum and evaluation project.* Madison, Wisconsin: Wisconsin Department of Public Instruction, 1977.

Brown, M. & Paolucci, B. *Home economics: A definition.* Washington, D.C.: American Home Economics Association, 1978 (Mimeograph).

Combs, A.W., Avila, S.L., & Purkey, W.W. *Helping relationships - basic concepts for the helping professions.* Boston: Allyn & Bacon, 1971.

Larson, S.G. *A hypothetical moral obligation to define clearly the general goal of home economics: A philosophical analysis.* Unpublished doctoral dissertation, University of Minnesota, 1974.

Paolucci, B. *Significance of family values to home economics.* A preliminary draft of a paper to be read at the Clara Brown Arny Symposium on Family Values, Minneapolis, Minnesota, March 17, 1970 (Mimeograph).

Vaines, E. *A systems view of the home economist: A composite of competencies.* Vancouver: University of British Columbia, School of Home Economics, 1978 (Mimeograph).

Related Resources

American Dietetic Association. Position paper on continuing education. *Journal of the American Dietetic Association,* 1974, *64,* 289.

Anderson, E.P. *Professional identity of home economists: a socialization process.* Unpublished doctoral dissertation, Pennsylvania State University, 1976.

Budewig, F.C. *Origin and development of the home economics idea.* Unpublished doctoral dissertation, George Peabody College of Teachers, 1957.

Cowan, D.L. *Professional value orientation of home economics.* Unpublished doctoral dissertation, University of Wisconsin, 1973.

Crosbie, B.A. Home economist image study — a synopsis. *Canadian Home Economics Journal,* 1978, *18,* 43-44.

Feniak, E. Home economics in Canada. *Illinois Teacher,* 1976, *19,* 232-238.

Fritschner, L.M. *The rise and fall of home economics: A study with implications for women, education, and change,* Unpublished doctoral dissertation, University of California, 1973.

Habermas, J. *Toward a rational society.* Boston: Beacon, 1979.

Lee, J.A. & Dressel, P. *Liberal education and home economics.* New York: The Bureau of Publications, Teachers College, Columbia University, 1963.

McLeish, J. The challenge of professional and personal renewal. *Journal of the Canadian Dietetic Association,* 1978, *39,* 274-280.

Marshall, W.H. Issues affecting the future of home economics. *Journal of Home Economics,* 1973, *65,* 8-10.

Murray, E. The home economist as professional educator. *Canadian Home Economics Journal,* 1978, *28,* 184-187.

Professional development session of the 1977 CHEA conference: TAKE STOCK-TAKE ACTION. *Canadian Home Economics Journal,* 1978, *28,* 45-46.

Simpson, E.R. *Home economics in Canada: The early history of six college programs.* Saskatoon: University of Saskatchewan, 1964.

Communique (Continued from page 2)

- CHEA Conference **1981** will be held in Toronto; the co-chairmen, Betty Ann Crosbie and Jean King, are already making plans for a memorable conference.
- Your executive has expressed concern over the length of time it takes for our publications, i.e. *CHE Journal* and the *CHEA Newsletter* to reach our members. Is it false economy to be using 3rd class mail when it can take up to a month for receipt of publications? However, at this point in time it appears that our economic situation demands the use of 3rd class mail. We would appreciate hearing from anyone who has specific thoughts on this.

The deadline for material to be submitted for the next issue of the CHE Journal is February 1, 1980

INTERNATIONAL FEDERATION FOR HOME ECONOMICS

Individual Membership Application form [ ] New [ ] Renewal

If this is a renewal has your address changed from 1978? [ ] Yes [ ] No

Name ______________________ (Please Print)

Address ______________________

City, Province ______________ Postal Code ________

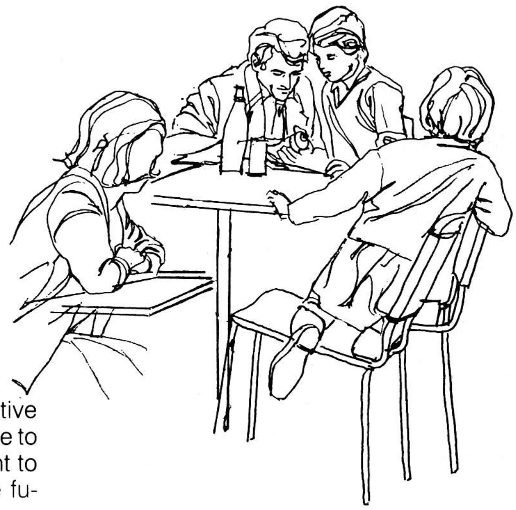
The CHEA National office will accept IFHE individual memberships provided this application is accompanied by a cheque or money order in Canadian funds, payable to:

Canadian Home Economics Association
203 Burnside Building,
151 Slater St.,
Ottawa, Ontario K1P 5H3

Yearly fee:
January 1 to December 31, 60 French Francs — $18.00 Canadian funds.

Families in Today's World: A Perspective on Parents

E. Joanne Briggs



Present evidence seems to indicate that the family is still the most effective and economic system for fostering and sustaining the development of the child. Burton White (1977) has long contended that we should be using our resources to help parents be more effective, to support the young child in the family rather than in an agency or institution. His thesis is that optimal psychological development is a function of the relationship between the child and the parents, particularly the mother. Effective parents encourage independence in their children, understand and respect their child's feelings and point of view. They express feelings of competence in raising their children. Education for parenthood (for the parents of children attending the school and for the community) has been a feature of many university child development or lab school programs. For many years, there has been a flood of "how to" books on parenting. Parent co-ops have thrived in some urban centers, but programs or information on effective parenting has only recently begun to reach out to all levels of society, through neighborhood programs in Y's and community centers, the media, particularly television, and social agencies with outreach or community-based programs.

Parenting programs have been proposed for inclusion in high school curricula. Child development and family life have been incorporated in current home economics courses of study. Adolescents are primarily concerned with their own identities and lifestyles and do not see themselves in terms of future roles. If preparation for parenthood courses are going to be attractive to high school students they will have to be carefully designed to be relevant to their lives, both present and in the future.

The work of researchers and investigators involved in study and work with parents and families seems to fall into five main areas.

- Knowledge of child development, what is appropriate behaviour on the part of the child and the relevant adult response to that behaviour;
- A knowledge of family structure including the systems approach to family functioning;
- The family's use of resources including time, energy, skill, economic resources and allocation of responsibilities;
- Relationships between children and parents;
- Communication styles and techniques.

Research is limited. Much of it is action research, naturalistic or experiential. A theory is formulated, a program is developed, and then it is observed. Some theories are developed out of the investigators own work, for example, Freud (1917), Virginia Satir (1972) and Burton White (1977). The earliest research on the effect of early life and of early family life particularly on a person's adult personality was carried out by Sigmund Freud. It is important to remember that Freud was a product of his time, Victorian Europe, and that the patients whom he studied, were middle class women, totally involved with themselves and their children. Society was highly structured and natural urges were denied or repressed, particularly sexual urges. Freud's psycho-sexual explanation of behaviour served as a starting point for many later researchers. His work is especially important for its emphasis on the causes of behaviour, and the importance of childhood experiences in the formation of the adult personality. Eric Erikson (1963) enlarged on Freud's theories, explaining behaviour in psycho-social terms. Adult behaviour was a result of the maturation of the organism in its environment, particularly its social environment. Behaviour was the result of the interaction between the person and the people in his environment, each affecting and being affected by the other. A consideration of systems theory (Kantor & Lehr, 1977) helps us to gain perspective on the impact of various elements within the family on all the family members as well as the impact of outside factors on the family's functioning. Virginia Satir's *Peoplemaking* (1972) is an excellent resource both on the structure of the family and on its use of resources. Studies of the relationship between parents and children can be found in Gordon (1972), Dreikurs (1964), Satir (1972), White (1977), Baumrind (1972).

What is effective parenting?

There are basic childrearing tools which are at least as important to parents as the usual carpentry or cooking tools that are available in most households. Citizens have a right to such tools for optimizing parenting just as they have a right to literacy and job skills for work and participation in our society.

Parents need knowledge about how children develop. Normative patterns and stages in physical, social language and sexual development as well as nutritional and health needs at these stages should be part of the knowledge base of parenthood. A sense of the continuity of development makes it possible for parents to anticipate and to plan ways of enhancing their own child's

---

Dr. Briggs is Acting Chairman of the Department of Early Childhood Education at Ryerson Polytechnical Institute. She has a M.A. and a Ph.D. from the University of Toronto, a Diploma in Child Study and a B.S.W. Her special areas of interest are education for parents and families and development across the life span. She is also a consultant for TV Ontario.

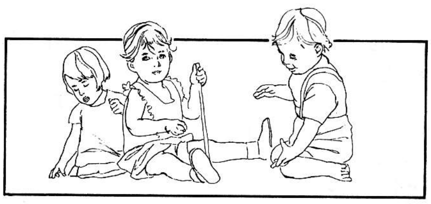
growth and learning. A parent is thus able to have realistic expectations for the child's accomplishments and behaviour. Knowledge of emotional needs and typical early social-emotional behaviours may similarly forestall inappropriate parental response to common emotional responses of young children. Knowing the stages of cognitive development should help parents form more realistic expectations of the sequences of development and the prior understandings required for more mature cognitive competencies.

A consideration of some of Erikson's stages of social and emotional development and Piaget's stages of cognitive development, and the appropriate parenting role for each stage, illustrates the value of a knowledge of human development. In the first of Erikson's stages, *the formation of basic trust,* the parent tries to meet the child's needs promptly and reliably and to provide plenty of physical handling for the child. In the next stage, *autonomy,* perhaps better known as negativism or the "terrible twos", a parent would try to give the child room to grow, supporting a child's efforts to do things for himself or herself, to be independent. Similarly, in adolescence, one needs opportunities to be independent, responsible, encouragement to know oneself, and to plan for the future.

In Piaget's first stage of cognitive development, called the *sensorimotor stage,* a child experiences the world through the senses; eyes, ears, nose and touch. The parents' role here is to provide opportunitites for exploration and opportunities to sensibly experience as much of the world as possible. The child is also developing a sense of the permanence of objects and needs reassurance that people and objects exist even when they cannot be experienced. The child is learning to act on the environment purposively and again the parents' role is to provide an environment which the child is able to learn to control. As the child grows, the parent continues to encourage the child to actively experience the world and to process the information gained from those experiences.

Another basic need of all parents, regardless of their income or their education, is to learn how to observe a young child. Looking at a child casually but carefully helps parents see where their child is "at" and it makes it possible to match actions, tools or toys to the child's readiness to achieve certain developmental goals. The parents can adjust to the individuality of their own child's developmental pattern, and providing the right stimulus, be it a baby apron, a book or a toy, to challenge and stimulate rather than frustrate or overpower. Similarly with adolescents, the parent can encourage and support independence and decision making as the young person becomes more and more competent. Opportunities to be "on one's own", to look after oneself are particularly valuable.

Knowledge of a variety of strategies of child rearing, alternative ways to discipline or simply to manage day-to-day family life, make parenting rewarding and satisfying to both parents and children. There are many opportunitites in everyday routines to create learning and problem-solving opportunities for children as well as social experiences for them. Encouraging a child to find his own way of completing a task, indeed choosing the task he wishes to work on and when he wishes to do it, make "chores" less of a strain on family relationships. Children who have had an opportunity to contribute to family plans and decisions are often more comfortable with family rules.



Language plays a critical part in our interactions with other people within and outside of the family. Knowledge of language development and the critical periods for its appearance are essential if a parent is to help a child advance in language skills. If parents are aware of the importance of cooing and babbling they are more likely to actively encourage their babies first efforts to make sounds. As their child grows older, expressive language can be encouraged by an attentive interested parent. The more experiences the child has, the more the child has to think about and talk about.

Most of all, parents need to know how important they are to the children's learning and what a difference they make in their children's lives. Their love and concern, their knowledge, interest and enthusiasm nourish the child's sense of self — basic to positive psychological growth — not to mention the pleasure and interest for parents themselves, indeed all adults, in their relationship with children.

Society has pre-empted many of the responsibilities of parents in such areas as education, religion, morality and sex education. As part of a general move towards participation in the planning of the institutions which affect their lives (community schools, neighborhood pressure groups, governing bodies, etc.) parents seem to want to play a greater part in the growth and development of their children. The only successful intervention programs beginning with Head Start, in the U.S. in terms of long-term goals, were those in which parents were involved. Reflecting a historical concern of women for children, most of these programs have involved mothers with some participation by fathers. There is a slight but discernible trend in our society for single fathers to raise children — usually as a result of separation or death but only occasionally by choice as an adoptive father. Shared responsibility for children is a noticeable trend in today's society, a trend we may hope will continue to strengthen.

A knowledge of human development can also contribute to an understanding of oneself. Those who have solved their own identity crises and have formed a mutually supportive relationship with another are prepared to accept responsibility for a child's development. A sense of oneself as a worthwhile person enables an adult to relate to a child, to love a child in terms of his own strength rather than his weakness. The well-functioning adult will not look to the child to meet his own growth needs. Understanding of self can be enhanced by an investigation of transactional analysis, of Gestalt psychology, or of the human relations movement.

The development of the Women's Movement makes some investigation of the acquiring of sex-role identities important. Research seems to indicate clearly that adults treat boys and girls differently from birth, perpetuating outmoded sexual stereotypes, and limiting the potential development of both men and women. As women play a more active part in the worldly work, the family of necessity, will adjust and change. Most of the research on maternal employment seems to indicate that women who choose to work, are happy about this choice and enjoy their job, and make the most effective mothers. Children learn about their social role from the role models available to them. Their

parents are the most powerful models. Daughters of working mothers tend to consider a wider range of possibilities when choosing their life styles.

Resource Materials for Effective Parenting

Although there has been an influx of "how-to" books on effective parenting in recent years, some emerge as more useful than others. Some are more effective in certain circumstances for certain parents than others. Some can be used without help — some need to be accompanied by courses. Regardless of method, all persons can benefit from an opportunity for discussion. *Parent-Effectiveness Training* by Gordon (1972), and *Children the Challenge* by Dreikurs (1964) offer techniques which parents can put into practice in their daily lives and see immediate as well as long-term effects. *Peoplemaking* by Satir (1972) emphasizes the importance to all family members of a positive self-concept, looks carefully at all forms of communication, and suggests practical plans for improving the qualities of family living in a straightforward, easy-to-read manner. Each of these authors, and several others, can be explored in various ways, depending on the circumstance.

Family planning or more accurately, planning family life, equipment, and day-to-day schedules are other areas where most families would welcome additional information. Each family member is a separate person with needs of his own — how best to allocate family resources — economic, time, space — is a complex question in today's world. How can family members function as a unit, make decisions which consider both individual needs and the needs of the group within the limits set by their particular circumstances? The behaviour of each member of the family affects each other member. Responsibility and respect engenders mutual consideration. Conversely one malfunctioning member affects all the others. Each family exists in a cultural environment which structures and limits its effectiveness as a unit. Food for the family, housing, sleep and play, television, school and leisure activities are only a few of the issues which concern parents. Satir (1972) discusses the family's use of resources, how to use time, energy, skills and talent available to even the youngest child. She cautions her readers to adjust their family's lifestyle as the children and the adults grow and change and have different needs and different life skills. Systems theory (Kantor & Lehr, 1977) helps us understand the interaction within the family, as well as the family's ties with the community.

Making Parenting Education Relevant

How is information disseminated — how can resources for parents or other adults working with children be made widely available? There are many possibilities both formal and informal. Some of the methods used are: parent-teacher-counsellor-interviews, or informal day-to-day contacts; parent involvement in planning day-care, nursery schools, public schools, hospitals; courses in educational institutions, community and neighborhood centers, homes; home visits, a visiting parent worker (i.e. public health nurse); newspapers and magazines, pamphlets, books and charts.

There are basically two approaches to groups which usually emerge from the concerns of the group participants — a more formal presentation by the group leader followed by questions and discussion, or a less formal discussion based on issues or problems raised by the participants. These two alternatives; a lecture format or a seminar-discussion framework, would also present a choice to the high school student. Discussion is important because it helps a student consider his own experience within a framework and to gain some perspective on his own life.

It is a good idea to prepare a summary of the discussion and distribute it to the group members so it can be recalled and considered at a later date. Most parents seem to benefit not only from the information and new knowledge but just as importantly from the support and encouragement both of other parents and of the "experts". It is more of a challenge to make parenting material relevant for young high school students. The content must be presented in terms of their own lives and concerns and there should be many opportunities to process the information, to share and thus to clarify their own experience. Focussing on the need to establish an identity of their own, separate from parents and helping them to communicate more clearly to their own classmates, will enhance their effectiveness as adults, hence as parents. And they are tomorrow's parents ●

References

Bee, H. *The developing child.* New York: Harper & Row, 1975.

Driekurs, R. *Children: the challenge.* New York: Hawthorn, 1964.

Erikson, E. *Childhood and society* (2nd ed.). New York: Norton, 1963.

Erikson, E. *Identity, youth and crisis.* New York: Norton, 1968.

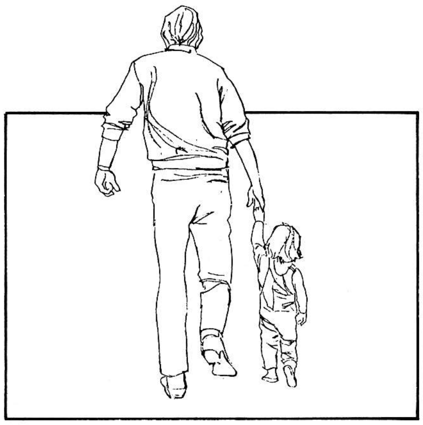
Freud, S. *Psychopathology of everyday life.* New York: MacMillan, 1917.

Gordon, T. *Parent effectiveness training.* New York: Peter H. Whyden, 1972.

Kantor, D. & Lehr, W. *Inside the family.* San Francisco: Jossey-Bass, 1975.

Satir, V. *Peoplemaking.* Los Angeles: Science and Behaviour, 1972.

Schell, R., & Hall. E., *Developmental psychology today.* (3rd ed.). New York: Random, 1979.



Letters to the Editor are invited and will be published as space permits. They should be of reasonable length and typewritten, double-spaced. If necessary, they will be edited or abridged.

Due to a mechanical problem, a small number of copies of the Fall issue of the *CHE Journal* contained some blank pages. If you received one of these, please return it to CHEA National Office for a replacement. We regret the inconvenience this may have caused some of our readers.

Joint Efforts in Guatemala

A Report of an International Workshop in Home Economics

*Maureen Picone and Lila Engberg**

The International Federation for Home Economics held its first regional meeting August 8-11 in Guatemala City. The Americas Region is one of five designated IFHE regions in the world and the first to have attempted a meeting on its own. The idea for holding regional meetings was suggested eight years ago at the 12th Congress of the Federation held in Finland. The major reasons for making such a suggestion were: (1) to bring together those IFHE members and associate members that were geographically and culturally close, (2) to foster joint efforts to work on matters of common professional interest, and (3) to strengthen localized involvement and service to society.

Fifty-nine delegates from twenty-two countries in North, Central and South America, Mexico and the Caribbean worked diligently for three days on the theme "Strengthening Programs in Home Economics." Among the delegates were seven Canadians representing CHEA and their local membership: Maureen Picone from British Columbia, Jean Sisson and Wanda Young from Saskatchewan, Nora Cebotarev, May Maskow and Lila Engberg from Ontario, and Henriette Rochette-Lettir from Quebec.

Language barriers were overcome by interpreters from I.G.A. (Instituto Guatemateco-Americano) who provided instantaneous English-Spanish translation during the plenary sessions. Delegates who spoke both English and Spanish donated their services during group discussions.

The conference was held at Hotel Cortija Reforma, hosted by the Guatemalan Association of Family Educators, Angelica de Villagran being president and an executive member of IFHE. The association members opened their doors and their hearts to us all. In true Guatemalan tradition this delegation and the people of the country made us feel at home. "Es su casa" (this is your home) they said to us and treated us exactly that way. Immediately after registration and introductory session we were wisked away to a "fiesta"! Our host was Senor Castillo a well known businessman and community leader. He graciously provided refreshments, hors d'oeuvres and a marimba band for our entertainment. Delegates from all the hemisphere formed a circle and danced around the room. We did not all speak the same language but the feelings at the party broke all communication barriers. We felt comfortable working together the rest of the week.

Prior to the reception on opening night, Wednesday August 8th we heard two important speakers. The keynote address was given by Ing. Carlos L. Arion of the Inter-American Institute for Agricultural Cooperation (IICA) based in Guatemala. He underscored the importance of the home and family to social and economic development and noted that home economics is the profession with major potential to assist the family's productive efforts. Development policies in many countries have focused on industrialization and capital intensive technologies and encouraged the emigration of large numbers of people from rural areas to the city in search of jobs. As a result, many rural women have become increasingly involved in food production and in providing some means of financial support for the rural household. Agriculture is highly dependent on the labour of women. Thus, an integrated approach is necessary which takes into account the diversity of women's responsibilities and the levels of development throughout each country. Ing. Arion described projects for integrating women in development and he promoted rural development efforts.

Margaret Fitch, one of three vice-presidents of the International Federation for Home Economics came from Hawaii for the meeting. She spoke at the first session on the professional challenges and potentials of home economics and of the International Federation. There are few IFHE members in Latin America and the Caribbean but the scope is there, to expand professional organizations and links in the hemisphere. The U.S. membership is particularly large, and there are possibilities for support of new associations.

The planning committee for the meeting was established by Dr. Wanda Young in 1977 when she was one of the vice-presidents of IFHE. Dr. Lila Engberg, the CHEA/IFHE liaison took over from Wanda as co-ordinator of the meeting at the time of the IFHE council meeting in Ireland, August 1978. The Canadian International Development Agency (CIDA) Non-governmental Division was approached for funds after that meeting, through the help of Linda Reasbeck, newly elected IFHE executive member. Our project submission was revised in 1979 in order to put more emphasis on rural problems. CIDA does not normally fund meetings but it was recognized that our meeting could be an initial step in North-South collaboration and in planning projects to help rural families in Latin America and the Caribbean.

We are interested in action, and it was because of possibilities for follow-up that CIDA was willing to provide $18,000 as a matching grant for the IFHE Regional meeting. The principle of "matching" means that government funds are matched by resources (money, goods, and volunteer work) provided by the recipients. The money was used to finance 20 delegates from the least developed countries of Latin America and the Caribbean and to cover some of the expenses of the meeting. American and Canadian delegates had to pay their own way. The host country, Guatemala, also

* Maureen Picone spent a year teaching in Guatemala and is now teaching home economics at Summerland Secondary School, British Columbia. Lila Engberg is Associate Professor, Department of Family Studies, University of Guelph, Guelph, Ontario.

contributed generously. The simultaneous translation equipment was donated by the government of Guatemala for the duration of the meeting and the services of three Spanish/English translators were provided at nominal cost. Bus transportation was made available too, on three occasions without cost to the participants or our organization. Participants were transported by bus to an evening reception on the first evening. Later in the week we were transported to visit INCAP, the Institute of Nutrition for Central America and Panama and the Marion Bock Normal School where students are trained in home economics, and later to the Guatemala craft market.

In preparation for the workshop, questionnaires had been sent to all 52 delegates who had indicated they would be able to participate in the Guatemala meeting. The questionnaire was divided into three sections — one related to the identification of major national needs which home economics could serve, the second related to the capabilities of the profession for meeting the needs and the third, to review successful projects and strategies for the future. The focus was not just on rural but on the full range of potentials for action. Responses were sent to Dr. Marian Davis (USA), Chairman of the programme committee so that she could have them collated and summarized at the workshop. Participant involvement in these three topics was made possible at four major plenary sessions and in four small discussion sessions.

Needs

The topic of the plenary session on Thursday morning was the identification of needs. Information in the questionnaires on national and professional needs as perceived by respondents from each country were summarized. Presenters of the summary reports had been selected in advance from various geographical areas to develop their own presentation for Central America, South America, North America and the Caribbean. The most common needs expressed were for more training opportunities and facilities, increased professional recognition and strength, research and resources to assist families in dealing with poverty, inflation, rural and urban development. The rural problem was not singled out, but the inter-dependencies of people within any given country were recognized. Three discussion groups dealt with the problems in more detail. We were amazed at the similarity of problems expressed by so many different and distant countries. For example, the nutritional and social problems of the rural populations of all the countries were very similar. Many countries shared the need for higher education for trained home economists and for research programs.

Capabilities

The evening plenary session was used to hear reports from the second section of the questionnaire - the report of professional capabilities given the needs which had been identified earlier in the day. Again, separate reports were given to represent each sub-region. The overview showed that most countries had programmes labeled "home economics", but that there was a wide range of interpretation and in opportunities for training and professional support.

In many Latin American countries, social work has a long tradition, and the distinction between its efforts and those of the home economics profession were not clear. However, the distinguishing feature of social work was stated to be its curative role and that of home economics, its preventative and developmental aspect. Most countries had some form of extension education including 4-H Club activity, but there was a wide range of home economics offerings in formal education. Some post-secondary educational opportunities were available in Brazil, Dominican Republic, Colombia, Chile, Panama and Puerto Rico. The need for a hemisphere home economics centre was expressed in the discussion sessions in order to develop scholarships and practical research related to meeting basic human needs.

Strategies for Development

Most of the discussion on August 10 centred on ideas for development projects, for exchange opportunities and for working with foundations, government and international agencies to seek funding or grants to support development projects. Specific areas of interest for research and action were developed as various groups met informally during the next two days (see the list of suggestions at the end of this report).

A major highlight of the first evening's session was news of the possibility of the establishment of regional executive secretariat facilities for the Americas Region of IFHE in cooperation with IICA at their headquarters in Costa Rica. Such facilities would provide a base for the Latin American Association of Family Educators and also for IFHE in the region. As a token of their appreciation to the Latin American group and their warm hospitality in Guatemala, a gift of $US 145 was given to Angelica de Villagran to pay for a 1980 membership in IFHE for the Latin American Association of Family Educators.

Courtesy of Marion Davis

Keynote speakers at the opening plenary session included Dr. Carlos Arias, left, of IICA (Inter-American Institute of Agricultural Cooperation); Mrs. Margaret Fitch, U.S.A., IFHE Vice President for the Americas; and Dr. Lila Engberg (extreme right), Workshop chairman.

Summary and Recommendations

The major conclusions and recommendations to come out of the three discussion groups were brought to a final plenary session on Saturday morning. Group A reported on socio-economic and development needs, stating the low-income, low productivity and high unemployment were ongoing concerns and that the participation of the people themselves was important in order to identify needs and educational priorities. Education was often not related to needs and a continued diagnosis was suggested as being required in

each country. Education related to housing, health, consumer education, communication and management of income were noted as needing attention, and it was recommended that a curriculum specialist would be helpful in each country to collaborate in designing programmes that were relevant to both rural and urban people. They recommended that creation of a material and visual aid center and a communication system to enable home economics and other workers to keep in touch and support each other's work.

Group B reported on the needs of home economics as a profession. They concluded that there was a need for a clear definition and recognition of the action field of home economics and for training at all levels. It was recommended we advertise the achievements of our work at community, national and international levels and obtain increased support of home economics by national policy-makers. It was emphasized again that families and communities be involved in planning future programmes and that the articulation of needs at that level would help define current actions and needs for research. The strengthening of professional associations in Latin American countries was another recommendation. The Caribbean Association was recognized as having stimulated the formation of the Latin American Association of Family Educators.

Group C were concerned with project development and how to define projects based on the most significant problems facing ordinary people and identified by the people themselves. They recommended the establishment of an international research centre to support home economics and participatory research, also more advanced professional training. In addition, they suggested an evaluation system be developed and guidelines for research projects and for educational training, both formal and informal.

Following the reporting sessions, participants divided into sub-regional groups to decide how each country would assume follow-up responsibilities on their return home. The most important outcome of this consultation was the formation of three hemispheric committees to look into:

- Establishment of an International Home Economics Centre for research, professional development, training at different levels of expertise and for advice on the developmental of formal and non-formal education.
- Strengthening of national and international home economics associations, their structures and organizational capabilities.
- Development of exchange programmes for students, faculty and para-professional workers.

Meetings of these new committees were held on Saturday afternoon and evening after the closing of the workshop. This continued momentum and dedication to mutually recognized needs was one of the gratifying outcomes of the workshop. Guest representatives from UNICEF, the World Health Organization (WHO), IICA in Guatemala and Costa Rica, and the International Development Research Centre (IDRC) in Colombia noted the enthusiasm of participants. They were able to provide inputs to the meeting and to interested delegates about their funding policies. Many ideas for action were inspired as a result of the meeting. It was felt that in many places, institution building had to become a priority in order to improve local training and research capabilities. A number of projects were proposed for immediate follow-up as joint projects for which funding is required. We need your help with these. Your local International Development committee could help by making a contact and requesting funds from CIDA NGO Division to support your project.

Next Meeting

An invitation was extended by the delegate from Venezuela to meet in her country — Venezuela — in two years time (1981). The Congress of the International Federation for Home Economics is being held in the Philippines in 1980. The theme is "Home Economics — Partners in Development". This is the first IFHE meeting to be held in a developing country. Latin American and Caribbean delegates, in particular, were encouraged to attend and to report on their development activities. We hope many Canadians will attend as well.

Proceedings of the workshop and the list of suggested projects will be sent to all participants and others who are interested so that they become aware of each other's projects and the long-term objectives with respect to strengthening programmes in home economics. It is in our partnership that we hope to grow in strength and in our capability to serve families in need all over the world.

Suggested Collaborative Research and Action Projects

One of the objectives of the meeting of the Americas Region of the International Federation for Home Economics was to generate collaborative actions which would support economic and social development in Latin America and the Caribbean. The family is the focus of concern within the home economics profession. The suggestions for projects given below reflect that concern. The ideas generated at the meeting of the Latin American Association of Family Educators held on Saturday, August 11, 1979 are given first, then those of the Caribbean Association of Home Economics. Project proposals will need to be written and submitted to various institutions and funding agencies as a next step. Write to Lila Engberg for more detailed information.

BRAZIL

- Project for the creation of a Centre for the Study of Human Development at the Federal University of Ceara in the North East.
- Program of Mother-Child Assistance in Guaiuba: to develop health and sanitary education for pregnant and nursing mothers in rural areas close to Fortaleza (the capital of the State of Ceara).
- Food Technology Project: to discover new and better ways for preparing and processing black beans.
- Workshop or Consultancy in Family Economics and Management: to develop a holistic framework for research and teaching in the areas of family economics, management and family relations in two universities, Vicosa and Pelotas.
- Food Preservation and Extension Project: to develop simple home or village technologies for the preservation of fish and vegetables; to institutionalize an extension field service which could involve families in the food preservation project.

COLOMBIA

- Appropriate Technology: to develop simple home or village technology for processing of sheep wool, for the expension of traditional weaving and for marketing of the products. Location: the Highland communities.
- Extension Education: the development and organization of home economics adult training for women factory

workers and wives of factory workers in Bogota.

- Family Studies: the development of family related research at the University of Caldas, School of Home Economics.

COSTA RICA

- Teacher Training in Home Economics: to develop short courses and help in the in-service training of home economics teachers.

HONDURAS

- Extension Education: a project for the disposal of coffee waste and rice hulls and the production of organic fertilizer (small scale processing plant) is underway but could be extended with home economics in order to improve family well-being in three selected communities.

GUATEMALA

- Co-operative Education: to help local community set up organizations such as co-operatives, credit institutions and marketing education in order to improve income earning capacity of rural people.

MEXICO

- Food Technology: to establish local training for research in the area of small scale home and village technology for preparation, preservation and storage of food (corn, beans, vegetables, fruit) in rural areas.
- Rural Housing and Home Improvement: to develop research and training for generating and testing the technology for improvement of rural housing, for remodeling structures and layout and for home furnishings and equipment; Plan Puebla, College of Graduate Studies, Chapingo, Mexico.

JOINT PROJECTS IN LATIN AMERICA

- Environmental and Household Related Education Regarding Use of Coffee Waste — Brazil, Colombia and Honduras (similar to Honduras Proposal).
- Developing educational material for home economics workers in Agricultural Extension, Rural/Community Development — to be published and distributed through IICA.
- Parent/Child Creativity Centres — to expand the concept developed in Panama and supported by UNICEF for improving parent/child interaction through parent education centres.

CARIBBEAN PROJECT

A number of projects were proposed by the Caribbean Association of Home Economics and a link established with the Toronto Home Economics Association in Canada for a twinning arrangement to assist in implementing the projects. The priorities set were:

- Developing a textbook on family management in the Caribbean for use by students on several islands. A preliminary survey of family life and family management practices is to be carried out in order to help develop the content of the text. A resource person is requested to work with teachers.
- Teacher training workshops to provide advanced in-service training for home economics teachers
- Teacher exchanges
- Home economics equipment for training centres ●

Dietary Fibre: An Overview*

Louise Boyer

Abstract

This article is a review of current viewpoints on dietary fibre. Results of studies in Canada and the United States on the role of fibre in the prevention and/or treatment of intestinal disorders, cholesterol and diabetes are presented. The addition of fibre to bread is described. Cautions against "abuse" present the dangers of excess fibre. Government restraints for claims on fibre in commercial food products are explained and daily requirements tentatively given.

The conclusion states that going back to a simpler diet is the logical solution to the problem.

Résumé

Le document suivant résume certaines des opinions scientifiques récentes sur la fibre alimentaire. On y présente les résultats de plusieurs recherches faites au Canada et aux États-unis sur le rôle de la fibre alimentaire dans la prévention et/ou le traitement des maladies du système digestif, du cholestérol et du diabète. L'enrichissement du pain en fibres est décrit. Une mise en garde contre les abus est aussi présentée. Les normes gouvernementales canadiennes pour la réclame sur les fibres dans les produits commerciaux sont expliquées et la ration quotidienne recommandée tentativement présentée.

La conclusion propose un retour à une alimentation plus simple comme solution logique au problème de la diminution de la consommation de fibre alimentaire par l'homme moderne.

Louise Boyer graduated with a B.Sc. in Sciences Domestiques of Université Laval in Québec, in 1965. She did her dietetic internship at St. Michael's Hospital in Toronto. She has been working in Montreal as a home economist for Gaz Métropolitain and Catelli, and in the area of food product development for FBI Foods and Bromatech. Louise recently moved with her young family to Oakville, Ontario and is now working as a free-lance home economist.

---

* *This article is a translation of "Fibre alimentaire: faire le point" which appeared in the April 1979 issue of CHEJ.*

In recent years, food fibre has created much interest among scientists, nutritionists and consumers. More and more, doctors and nutritionists acknowledge the fact that the amount of fibre in the diet of modern man is inadequate. The following article summarizes some of the current literature on this subject.

These days, we consume few traditional sources of fibre — unprocessed cereal grains, raw fruits and vegetables. We have replaced them by refined cereals, cooked fruits and vegetables, canned or frozen, which have lost most of their fibre content through processing.

The potential harmful effects of this change in diet have been the subject of intensive research by scientists from various fields.

Researchers have encountered serious difficulties because the composition of food fibre is complex and some of its constituents are difficult to analyze and quantify.

Definitions

In the literature, we often come across such terms as "crude fibre", "dietary fibre" and "cellulose". There is confusion because many people believe that these terms are synonymous. **Dietary fibre** is the generic term used to designate that part of plant material in the diet which is resistant to digestion by the secretions of the gastrointestinal tract. **Crude fibre** is more specific since it means: "the part of dietary fibre which can be measured by an official method accepted by the Canadian and American governments (AOAC, 1970)". This measure is equivalent to 20 to 25% of the total amount of fibre present in any given food. What is left may be analyzed by some other methods which are not recognized by the governments (see governmental standards). **Cellulose** is one of the many constituents of dietary fibre, together with other polysaccharides, (hemicellulose, etc.) and lignin.

Role of Fibre

The results from many studies in Canada and the United States suggest that dietary fibre plays an important role in the metabolism of the human body. While studying the diet of adult Americans and comparing it with that of adult Africans, Burkitt (1974) concluded that the high fibre content of the latter helps in preventing gastrointestinal disorders such as diverticulosis, polyposis and cancer of the colon.

Andres (1976) reported on the work done at the V.A. Hospital and the University of Kentucky. These studies point out the beneficial effects of a diet high in dietary fibre, carbohydrates, and low in fat in the treatment of diabetes and cardiovascular diseases.

According to a report in *Food Processing,* on the findings of Dr. K.N. Jeejeebhoy of the Department of Medicine, University of Toronto, "fibre in the diet does have an important role in treating such intestinal disorders as constipation, irritable bowel diseases and diverticulosis", and "cereal fibre does have a slight relationship with decrease of cancer of the colon [other types of fibre do not]" (Food Processing, 1976).

Two American scientists, Lieberthal and Martens (1975) observed that a high fibre diet can significantly reduce the levels of blood cholesterol.

In summary, a high-fibre diet may contribute to the prevention and/or treatment of: diverticulosis, polyposis, irritable bowel disease, constipation, cancer of the colon, hypercholesterolemia, and diabetes (treatment only).

Enrichment of Food with Fibre

For the past two to three years, many American bakeries have been marketing fibre-enriched breads. Some are simply whole wheat breads with added bran. Others use refined cellulose to replace part of the flour and fat called for in the recipe. These breads contain an average of 30% fewer calories and 400% more fibre than whole wheat bread. What led these bakeries to invest in the development of such products is the increasing interest from the consumer for fibre.

McCormick (1976) reported that the manufacturers make claims on the good taste of the bread itself along with the low calorie and high fibre contents. Furthermore, many food companies are now working on the development of other foods enriched with fibre such as processed meats, snack foods, wieners, noodles, sauces and salad dressings.

Powdered cellulose is the most widely used fibre in enriched breads. Cereal bran, corn germ, soya husks as well as fruit and vegetable by-products are also used. Each of these sources contain a different percentage of fibre (Table 1).

Table 1
Crude Fibre Content of Some Foods

FOOD	% of crude fibre
Wheat bran	9.0
High-fibre bread	6.0-7.5
Bran flakes	3.9
Wheat germ	2.5
Defatted soya flour	2.5
Whole wheat bread	1.5
Enriched white bread	0.2

Cautions Against Abuse

Studies such as those by Van Soest (*Food Processing,* 1976) at Cornell University suggest that excess fibre can produce a new set of health problems:

- dietary fibre has the potential for binding fats, cholesterol and even minerals — so that excessive fibre intake can mean a loss of important nutrients;
- increased fibre in the diet of animals has been shown to induce caloric inefficiency; and
- high fibre diets in Africa and India, especially in areas where rice is the major dietary component, are also associated with a high incidence of mineral imbalances and kidney stones.

Spiller and Shipley (1976) wrote that extremely large amounts of PX (fibre) in the diet could cause loss of nutrients through the feces, a loss which could be critical in cases of borderline diets such as those of some elderly people or people with poor eating habits.

Government Standards

The Canadian food and drug regulations allow the use of the words "crude fibre" or "nondigestible fibre" in food advertisements. However, the word "dietary fibre" can only be used in the case of *wheat bran* and one can talk about "a good source of dietary fibre" only when the daily serving of a food supplies 18 grams or more of wheat bran.

Daily Requirements

Scala (1974), Director of Nutrition for Thomas J. Lipton wrote that "All the information on dietary fibre still doesn't permit the assignment of a nutritional requirement . . . . But it is certain that a substantial increase of our dietary fibre would be beneficial. Hence, an increase of crude fibre consumption from about 6 g per day to 12 g, or a little more, yielding a total dietary fibre intake of about 20 to 36 g per day would be beneficial." This equates to about "two tablespoons of bran with each meal."

Spiller (1978) states that the suggested daily allowance of fibre may be defined as follows: "the amount of any fibre component or a combination thereof that yields a transit time no longer than three days."

Conclusion

The many disputed opinions on the subject of fibre have had the effect of interesting different disciplines in the value of the North American diet. All the experts agree that this diet contains many faults. The remedy is nevertheless quite simple: a comback to a more balanced diet higher in raw fruits and vegetables and unprocessed cereals. However, we know that the modification of the diet is not an easy matter and that it represents a time-consuming effort in the field of education. The tendency of a good number of young people towards a more wholesome diet is certainly encouraging.•

REFERENCES

Andres, C. Dietary fiber. *Food Processing*, 1976, *37*(11), 68.

Burkitt, D.P., Walker, A.R.P., & Painter, N.S. Dietary fiber and disease. *American Medical Association Journal*, 1974, 229, 1068-1074.

Lieberthal, M.M. & Martens, R.A. Lowered serum cholesterol following the ingestion of a hydrophilic colloid. *American Journal of Digestive Diseases*, 1975, *20*, 469-476.

McCormick, R.D., *Food Product Development*, 1976, *10*(10). pp53-54: 66-74.

Nutrition News. Cautions against dietary fiber abuse. *Food Processing*, 1976. (37)11, 64. (a)

Nutrition News. A modified 'pro' vote for fiber. *Food Processing*. 1976. *37*(11). 66. (b)

Scala, J. Fiber the forgotten ingredient. *Food Technology*, 1974, *28*(1). 34-36.

Spiller, G.A., *Food Product Development*, 1978, *12*(3). 86.

Spiller, G.A. & Shipley, E.A., *Food Product Development*. 1976. *10*(7). 61.

In the name of humanity we call upon all governments and peoples everywhere, rich and poor, regardless of political and social systems, to act — to act together — and to act in time.

Declaration on Food & Population. Signed by 1000 prominent citizens of 100 countries and presented by C.P. Snow to the U.N. World Food Conference, 1974.

Betwixt and Between: Metric Update

Leslie Henry
Federated Co-Operatives Ltd.
Saskatoon, Saskatchewan

Retailers are the final link in the exchange between consumer and producers. As such, they have the greatest potential for aiding the metric conversion process. So, why don't retailers have everyone happily committed and on their metric way?

Well, it isn't that simple. Retailers, for the most part, are not manufacturers. Consequently, they must rely on manufacturers to provide them with products that have been correctly converted and labelled in appropriate metric style. Timing is often a problem as is co-ordination of the metric conversion. The various metric steering committees have greatly aided in avoiding major problems by setting up conversion schedules. All is well **until** a manufacturer fails to meet a conversion date, but other companies do. The result at the retail end can range from inconvenience to disaster. Consumers are confused, prices often vary and the result may be a metric product that fails to move off the shelf as consumers choose products in the more familiar imperial size. This is, of course, a decreasing problem. As more and more manufacturers convert, those who don't will tend to find it more difficult to market their product.

On the other hand, retailers are faced with that great mass, usually referred to as the "general public". Staff are faced with customers who have "bought their fabric by the yard for twenty years — why do they have to change now?" In many cases, they refuse to change and demand conversion back to "familiar" units. This puts an extra burden on staff who are also trying to learn the new system. Many retailers have put on excellent training courses for their staff. However, *the key to successful adoption of the metric system is to avoid conversion from imperial to metric or vice versa.* This holds true for both general public **and** staff. The greatest staff training program can slowly but surely be eroded by customers asking for conversion.

The results? Retailers are betwixt and between. Manufacturers on one side and consumers on the other. It is not an insoluble problem, but the answer does not rest solely with industry, be it manufacturing or retailing. The answer lies with education and we, as a profession, should be involved in education at all levels. Metric conversion affects all areas — health care, financial management, food, clothing, family living and so on. So, regardless of occupation, whether we are employed outside the home or not, we can all aid in the general attitude change necessary for successful conversion in Canada. Retailers and manufacturers alike **will** respond to a general public willing, or indeed anxious, to obtain metric products! ●

Members Have Varied Interests

Photos from provincial archives are an excellent resource for the study of clothing as evidenced by this photo provided for CHEJ by **Susan Turnbull**, University of New Brunswick, Fredericton. Susan is the president of the Apparel Studies Associaiton of Canada and is a member of the Education Committee of CHEA. Her research interests include consumer clothing and historic textiles.

Photo courtesy of the New Brunswick Provincial Archives

Home Economists Retire

Margaret Murphy

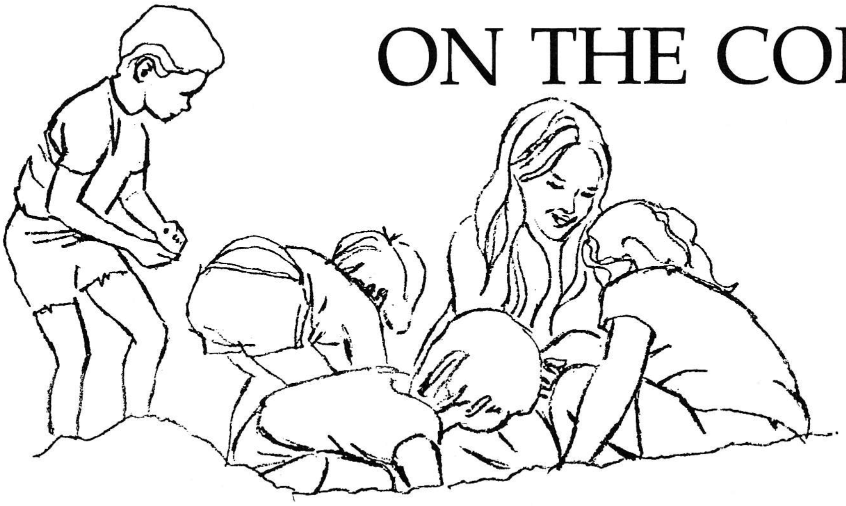
Margaret Murphy, Co-ordinator for Home Economics with the Vancouver School Board from 1966-79, retired last June. A native of Vancouver, Margaret received her preliminary education there before going to the University of Manitoba for a B.Sc. H.Ec. and the University of British Columbia for teacher training. For some years she taught in Prince George and Vancouver. During her years as co-ordinator, through her concern for quality of education and practical preparation of students for life in our society. Margaret promoted home economics programs in the schools and enhanced community awareness of home economics. She spearheaded nutrition education in elementary schools and introduced home economics in the form of mobile units for Grade 6 and 7 students and co-educational home economics and industrial education at the Grade 7 and 8 level. Margaret sat on many government and Department of Education committees. She has been an active member of 15 different professional associations related to education in home economics.

Ina M. Kniep

After a varied professional career, Ina Kniep retired from her most recent position, that of Senior Consultant, Dietetic Services, Institutional Operations Board, Ministry of Health, Ontario, where she had the responsibility for the dietary services for all public hospitals in Ontario. Her first job was with the Department of Veterans Affairs where she was the dietitian in charge of all the cafeterias in Toronto for the military returning from overseas. Later she was Director of Dietetics, Wellesley Hospital, and Senior Home Economist with Ontario Hydro. She is a graduate from MacDonald Institute, Guelph and the University of Toronto. Ina is looking forward to travelling with her husband and growing prize winning roses during her retirement.

Anne Y. Burns

Anne Burns recently retired from her position of Senior Consultant, Community Education Programs, Health Services and Promotion Branch, Department of National Health and Welfare. After receiving her early education in New Brunswick and Nova Scotia, Anne earned the degree of Master in Public Health from the University of Michigan, the degree Master of Education from the University of Ottawa, and completed the comprehensive examinations for a doctorate degree from that university. Following a varied career as teacher and dietitian, Anne served as an officer in the Department of National Health and Welfare for 35 years. She was Supervisor of Nutrition Education in the Nutrition Division for 15 years, then Educational Consultant in Maternal and Child before serving in Community Health Services. Over the years, among her other accomplishments she developed many nutrition and health education materials for professionals as well as for the lay public, for example, "Canadian Nutrition Notes", "Healthful Eating", "Up the Years from One to Six", "Food for Freddy" and "Growing Up Safely". Her most recent achievement is the preparation of the revised edition of *Canadian Mother and Child* for the International Year of the Child. Anne has membership in many professional dietetic, educational, public health and home economics organizations. For many years she served as the liaison representative for CHEA to the Canadian Council on Children and Youth.



ON THE COMMUNITY FRONT

Pat Stearman
British Columbia Provincial Director
(with assistance from Myrtle Siebert)

Action Nanaimo

Home economists in British Columbia are generous and creative with their time and talents. This article will give only a sampling of their activities, with concentration on the involvement of home economists in one community on Vancouver Island. This group, in Nanaimo, has a number of activities that come under the umbrella of Action Nanaimo.

A study done by the University Women's Club of Nanaimo showed there was a need for quality daily physical education for students in Nanaimo schools. The findings were presented to the Nanaimo School Board and inspired the formation of Action Nanaimo. Most schools in the district participate in the programme which involves a large number of teachers, parents, University Women's Club members, and other members of the community.

Nutrition education has been an important part of the programme since its inception but there was no paid professional to lead a nutrition programme such as the paid physical education coordinator. Therefore, the Action Nanaimo Nutrition Committee was formed by volunteers. They have started several successful activities. The Nutrition Committee has also involved teachers, school administrators, and parents in their activities.

The Nutrition Committee meets once a month to plan and coordinate activities and to exchange information. There are representatives from most schools on the committee so the information can be efficiently distributed.

One current project of the committee is the preparation of a recipe book which will contain sound nutritional ideas and recipes and will be presented in a way to make it useful for children, parents, and teachers.

Another project of the committee is involvement in Nutrition Week. This year, they distributed materials and prepared displays for the schools. The committee asked the community's supermarkets to cooperate with displays and with the distribution of Canada's Food Guide. Also, they sent packages of materials to bookstores, libraries, dental clinics, and medical clinics.

Members of the committee organized and ran concession stands at track meets, school sport's days, and badminton tournaments for the sale of nutritious snacks and meals.

Through the encouragement of the Action Nanaimo Nutrition Committee, many schools and/or classes now have a nutrition break instead of recess. Snacks are varied and often new foods are introduced on tasting days.

The October 1979 issue of B.C. Government News states:

> British Columbia individuals and organizations with outstanding records of service to children and families are being honored in this Year of The Child and Family with special achievement awards.

The intent of these awards is to show recipients the province's appreciation of their efforts and to encourage others to become involved in activities for children and families.

The Nutrition Committee of Action Nanaimo was the proud recipient of such an award. Particular recognition went to Myrtle Siebert, Jeri Manley, Wendy Smiley, and Lindsay Wikenkamp. The award was presented on September 26, 1979 by the Honourable Grace McCarthy, Minister of Human Resources.

Home Economists who are members of the Nanaimo University Women's Club have been involved with the Nutrition Study Group and also lend their talents in other fields in the community. **Anneliese Monk** has set up and manned nutrition education displays in the shopping malls. She has also attempted to encourage nutritious alternatives at concession stands at football games. Anneliese contributes her time and talents to the Girl Guide movement as well.

Sue Douglas has helped at the mall displays with nutrition information for the public. She was responsible for the information kits assembled for the B.C. Home Economics Association Metric Conference in March, 1978.

Wendy Smiley is a popular speaker for community groups. She photographs community nutrition activities and presents suitable ones to the media together with newspaper articles she has written. Wendy has also been an enthusiastic worker for the mall nutrition displays. She volunteers as a publicity resource person for Action Nanaimo and the Nutrition Committee. Wendy took an active part in the Nutrition and Fitness Conference sponsored by the B.C.H.E.A.

(Continued on page 69)

IYC

The child is not just a hobby or an issue. The child is at the heart of everything and very specially at the heart of the question of the peace, the happiness and the prosperity of the world tomorrow.

John Grun,
Director, Secretariat IYC

Home economists, along with other Canadians, celebrated the International Year of the Child, 1979, in a variety of ways. Some of our provincial directors have shared with us a glimpse of a few of the special activities of their associations.

QUEBEC

Numerous projects were organized and carried out by home economists in Quebec in connection with the International Year of the Child. In schools, teachers were able to develop these as a natural extension of the family living program particularly, but also in relation to various aspects of foods and nutrition, housing and clothing. These projects were planned within a particular school, and were kept in tune with local conditions and needs.

The theme of the Annual Teachers' Convention of the **Provincial Associations of Protestant and Catholic Teachers** focused on the child and the importance of quality in education. All aspects were covered according to particular group interests. This focus was also very evident in various other seminars and conferences held by associations such as the Council for Exceptional Children — Quebec Chapter, and the Quebec Association for Children with Learning Disabilities.

MANITOBA

The **Manitoba Home Economics Association** planned several programs this year to tie in with the overall theme of the International Year of the Child. The first was a session in the fall with Dr. Ken McRae of the Children's Centre in Winnipeg. Dr. McRae spoke on the problem of child abuse. He discussed the incidence of abuse, care of abused children and counselling of abusive parents.

Nutrition education was the theme of the second project — a continuing education workshop co-sponsored by MHEA, the Dietetics Association of Manitoba and the Manitoba Home Economics Teachers' Association. Dr. Harold Jacobson of Rutgers University spoke on "Nutritional Services for the Pregnant Woman — How Do We Know They Work?"

MHEA's joint meeting with the Dietetics Association of Manitoba was the occasion for another program on nutrition. A film on bottle feeding in third world countries was shown.

The annual meeting and dinner of the association featured Judy Wainwright as guest speaker. Judy is former director of the Day Nursery Centres in Winnipeg. Along with a group of people involved in day care, Judy was a recent visitor to China.

BRITISH COLUMBIA

One event the **British Columbia Home Economics Association** held to celebrate IYC was a dinner meeting at which Donna Cotes, B.C. Chairman for IYC spoke.

ALBERTA

As a continuation of an IYC project, the **Alberta Home Economics Association** is presently preparing a working paper, "Day Care as a Family Support System". A resolution was passed at the annual meeting to show that AHEA has taken a stand in support of the protection of children in the courts. Motion: "That the Alberta Home Economics Association endorse the delivery of community support services such as advocate, homemaker, teacher, etc. to those children in need of protection and to promote the extension of the service in cases where it is not presently delivered".

The **Calgary and District Home Economics Association** jointly sponsored seminars for day care operators, "All About Toddles's Tummies". They also held joint meetings with the Alberta Dietetics Association to learn about "Hyperactivity in children".

The **Lakeland Home Economics Association,** during its first year as an association, had as its theme of study, "The Child in Society". Meetings took the form of panel discussions where community workers dealt with problems dealing with handicapped children as well as with native children.

The **Red Deer Home Economics Association** held a workshop for the public entitled "Pre-Teens and What Makes them Tick". Another program, "The Father and the Child" was held for members.

CHEA

The Foods and Nutrition Committee and the Committee on International Development collaborated in preparing a position paper on infant and child feeding. The paper appeared in the Fall, 1979 issue of the *CHE Journal* (pp. 199-201).

IFHE

CHEA holds membership in the International Federation of Home Economics and thereby shares in its activities. IFHE has consultative status on the Economic and Social Council of the United Nations and is on the Committee of International Non-Governmental Organizations (NGO's), the body that suggested IYC. IFHE is represented on several of the working committees of NGO's. One of particular interest is ATD (Aide à toute détresse)-Fourth World. "Fourth World Children" are defined as children from underpriveleged surroundings in industrialized countries (IFHE, No. 2, June 1979, p. 18).

IYC has served to heighten our awareness of the problems and many-faceted needs of children everywhere. It is to be hoped that the impetus of the Year will lead to a permanently higher level of concern for, and action on behalf of, children by home economists and others. ●

Viability and profile of the consumerist segment

J.C. Bourgeois and
Barnes, J.G.
1979
The Journal of Consumer Research. 5: 217-228.

The consumer movement has generated much interest in the past decade. The authors contrasted consumerists with a general sample of consumers. A consumerist was defined as "active in pioneering and supporting consumer issues in order to upgrade and protect the well being of consumers". A concise tabular summary of major studies of consumerists was presented and from the literature survey hypotheses were generated.

Toronto area members of the Consumers' Association of Canada (CAC) composed the consumerist sample while Toronto members of a consumer mail panel represented the general populace. Questionnaires were returned by 968 (73%) of the panel members and 267 (45%) of the CAC sample. Lifestyle, media usage, retail shopping behaviour, attitudes toward advertising, demographic and socioeconomic data were collected. The data were factor analyzed to form indices. The two sample groups were compared using t-tests, crosstabulations and multivariate techniques.

The two groups were found to be significantly different. CAC members were better educated, more likely to be in management or professional positions, had higher incomes and smaller families than the general consumer group. As well, CAC respondents liked shopping less, looked for bargains less, were more independent and self confident, were less intimidated by sales clerks and were more negative toward advertising. Also they read more conservative newspapers but read less advertising, watched less television but what they did watch included news, public affairs and documentaries.

In addition, the researchers identified the consumerists who existed within their general consumer sample. Approximately 15% were consumerists, a result comparable with previous research.

The study has practical implications for marketers who should recognize that the consumerist frequently influences other consumers. Policy makers should realize that those who actively pursue consumer issues may not represent the mass of consumers. Finally, a profile specifically of CAC members was revealed.

Marjorie Wall
Faculty of Family and Consumer Studies
University of Guelph

Rural Women's Study: Their work, their needs and their role in rural development

A C.R.D.C. Study Report
1979
The Council on Rural Development Canada (106 p.)

A study of 908 women, about 95 from each province carried out during the fall and winter of 1977/78 by the Canadian Rural Development Council (C.R.D.C.) in co-operation with the Federated Women's Institutes of Canada, is a very useful work given the scarcity of research information about the work of women in Canada. Jane Abramson, head of a committee of Council was responsible for the design of the study and for its completion. The Council was concerned that women did not appear to be represented in local development planning groups and did not identify with the issues being discussed. They suggested that women were not disinterested in community, and that if the concept of development were broadened to include human development as well as economic it would be apparent that women had an active role to play. A description of the methodology, the questionnaire and a tabulation of the data are included in the appendix, results described, interpreted and followed by policy recommendations worth noting in each of the three chapters of the report.

The report begins by stating that the meaning of the term "work" has changed and that now it refers almost exclusively to the activities of members of the paid labour force. Women are the chief suppliers of unpaid labour in work associated with housework and childcare. That type of work is de-valued thus affecting the status of homemakers.

Chapter 1 follows with a report of how women allocate their time on housework, satisfaction with the house as a work place and various household tasks, and an estimation of husband's involvement in various forms of housework. Participation in the labour force is described giving differences in participation rates by marital status and size of family. Comments are made about changes in the family enterprise and the kinds of work women do. The average total number of hours worked by rural women who combine household chores and work in family enterprises was reported to be very heavy (81 hours per week).

Chapter 2 is based on reports of satisfaction with work activities and whether or not rural women think their needs are being met. The study of needs included availability of leisure and recreational facilities, acceptable levels of basic services, access to the labour force and to further education, opportunities for advancement and self-development. The chapter also suggests ways in which rural communities fail to satisfy some of the important needs of rural women, and adds to the list of proposals for change.

The final chapter refers to the growing body of literature known as "The New Home Economics" and its emphasis on home and community as components of the same socio-economic system. Time is stated to be the scarce and valuable resource in this framework.

According to the study so much of

rural women's time was taken up with work related to the economic and social well-being of the family that little remained for other dimensions of community life, particularly at the community decision-making level. Few women were reported as taking part in these organizations that promote the business, economic and political interests of the community, but they were involved in other broad based kinds of voluntary associations.

It was important to the writers that women learn to play a greater role in the rural development process, that they become more aware of the roles open to them and that ways be found to increase the amount of free time at their disposal; clearly management questions. Recommendations, however, do not take fully into account the division of labour in the household and the labour force and how to bring about shifts in the kinds of work done by men and women.

Lila Engberg
Faculty of Family and Consumer Studies
University of Guelph

Atittudes Toward clothing and self-concept of physically handicapped and able-bodied university men and women

B.L. Feather, B.R. Martin, and W.R. Miller
1979
Home Economics Research Journal, 7(4), 234-240

The purpose of this study was to determine if there was a relationship between physical ability and sex and (1) one's attitude toward clothing; (2) one's self-concept scores; (3) one's level of satisfaction with the availability of clothing, and; (4) between self-concept and one's attitude toward clothing.

Instruments used were the Tennessee Self-Concept Scale, a personal data form requesting information on clothing satisfaction, and factors associated with the physical handicap. A clothing attitude scale based on the work of Zentner, Creekmore, Brady and O'Connor was developed using the attitude variables of comfort, durability, management, appearance and fashion.

A random sample of 76 able bodied students from the University of Missouri-Columbia and a complete sample of 35 physically handicapped students participated. For this research, handicapped students were those who were in wheelchairs. About three-quarters of the handicaps were acquired and the remainder were congenital.

The findings indicated a significant difference between the attitudes toward clothing by sex but not by physical ability with women showing a more positive response on each of the five variables. There was no significant differences found between the other relationships of physical ability and sex and, self-concept scores, level of satisfaction with the availability of clothing or between self-concept and one's attitude toward clothing.

Constance A. Jefferys
College of Family and Consumer Studies
University of Guelph

Participatory Research: An approach for change

B.L. Hall
1975
Convergence, an International Journal of Adult Education, 8 (2), 24-31.

The author has pioneered a research approach and written the introductory basic article for a special issue on participatory research. He argues that the classical approach to social science research has several shortcomings for adult educators. First, survey research over simplifies social reality because it usually does not take into account the responses of groups but extracts information from individuals in isolation from each other and then aggregates this data to a single set of figures. It uses a forced choice approach in the interview or questionnaire not allowing for experiences that do not fit the framework; and the results tend to present a static picture of one day under the set of conditions which prevail at the time.

A second comment was that survey research was often alienating, in that people are considered sources of information, but are not expected to help with data analysis. The persons most familiar with the problems, those with poor health or poor nutrition, do not have control over the research activity.

A third problem noted was that respondents who are treated only as sources of information are not likely to participate actively in creating the supportive environment required for change. They do not link the research activity to subsequent action.

A final critique of educator's use of survey research was that the methods were not consistent with the principles of adult education. The major concept in adult education is that people can participate actively in their own development: identifying and articulating needs and working out the learning strategies to achieve desired goals on their own.

Hall then discusses alternative strategies and the development of participatory methods. These methods are particularly appropriate for an applied profession such as home economics, a profession that is concerned with the improvement of practices and not just knowing for the sake of knowing.

One of the major principles of participatory research put forward by Hall is that the community or population should gain not only from the results of the research but from the process itself. That is, participation of a research team with the people themselves enables the people to articulate problems and initiate processes to find solutions. The people are involved from the beginning and throughout the entire project; in discussion, investigation and analysis. According to Hall all persons, educators and agencies who have an interest or concern about the particular problem need to be involved if the goal of the research is to bring change. The research process is a part of a total educational experience which takes place over time. The questionnaire represents only the first stage, the basis for discussion. The interpretation of the data is shared and so are the decisions for follow-up action. The object of the process is to liberate human creative potential and to mobilize human resources for solution of social problems. The research process is directly linked to action.

The fact that Hall argues for a different relationship between professionals and ordinary people, that people are not actors or objects to be acted upon is an argument which is of vital importance not only to adult educators but to all of us in "people oriented" professions. We will do well to take note of the research that is now underway and to try the approach in home economics education.

Lila Engberg
Faculty of Family and Consumer Studies
University of Guelph

The Conserver Solution *by Lawrence Solomon. Toronto: Doubleday Canada Limited, 1978, p. 220; $12.50 or Paperback $6.95.*

Are you in the habit of separating your garbage into metal, paper, and wet? If so, you are already practising one of the recycling principles advocated by Solomon. The purpose of this book is to deal with issues related to the conserver society. The difference between the present consumption society and a possible conserver society are discussed.

There are five sections in this book: the first two describe the conserver approach, the third section relates to research possibilities and the determination of Canadian needs, the fourth section addresses some specific issues and the final section makes recommendations for action. The issues addressed in this book include diminishing natural resources, recycling, economic growth, obsolescence, advertising, foreign debt, inflation, unemployment, and the work ethic.

Solomon writes with imagination. Most chapters are introduced with an example, a review of history or an anecdote related to the topic. The book is easily read, and would be suitable for the general public, students from senior high up and professionals. An academic would prefer more detailed reference notes.

The unnatural waste, man's assault on the natural environment, the lack of consideration for the consequences of our actions, the lack of respect for people, the conformation to materialistic economic theories prevalent in Canada today are decried by Solomon. Canadians are warned that they may find themselves without resources in a resource based economy.

Solomon recommends that Canadians seek a self-fulfilling goal to be a nation of self-sufficient individuals actively involved in conserving the environment and resources. There are 16 specific recommendations for government action, and 12 for business and industry that would establish a conserver society if carried out.

The Conserver Society is thought provoking. The sections on advertising and inflation and the work ethic are useful for home economists. The challenge to each individual to act as a catalyst for change by being responsible for his own actions is strong.

Reviewed by:
Wanda Young, Ph.D.
College of Home Economics,
University of Saskatchewan

Household Equipment *by Louise Jenison Peet, Ph.D., Mary S. Pickett, Ph. D., and Mildred G. Arnold, B.S. New York, Chichester, Brisbane and Toronto: John Wiley & Sons, 1979, 8th edition, 583 p.; $22.45.*

Household Equipment is designed as a textbook and would be suitable for senior high school or university levels. It is comprehensive covering a wide range of household equipment including bathroom, heating and lighting fixtures, as well as kitchen and personal care appliances. It contains a wealth of information and would be more than adequate as a resource for a two-year program of study.

The book is well organized into chapters, each beginning with an introductory statement about the subject matter to be covered. Following many chapters is a list of terms and a section with suggested activities, experiments and projects for students to try. Numerous graphs, charts, diagrams and photographs are effectively used to explain the written material.

While an excellent reference on equipment selection, use and care, the book was written in the United States and the instructor using it as a text would need to be familiar with the Canadian scene. For example, "Energuide", a label indicating energy use of an appliance per month, is not mentioned. Also, the chapter on metric would need to be updated and adapted to include Canadian guidelines and conversion schedules.

One chapter is of particular interest. It deals with equipment for the elderly and the handicapped. It discusses the choice of particular appliances for these two groups but, more important, discusses evaluating any piece of equipment critically.

As the preface stated, changes in household equipment, particularly in light of the current concern with environmental pollution and energy use, take place "almost from week to week". Even though 1979 is the publishing date of this edition it is already, to some extent, out of date. Food processors and "hot air" corn poppers, for example, are not mentioned.

Reviewed by:
Karen Webster, B.Sc.HE.
Consumer Counsellor
Federated Co-operatives Limited,
Saskatoon

Additive Alert *by Linda Pim. Toronto: Doubleday Canada Limited, 1979, $2.95.*

A book on Canadian food additives, a thorough presentation of the subject for consumers — that has just been a dream for food and nutrition educators until now. But don't get your hopes up; *Additive Alert* just misses the boat. It's Canadian, thorough, and consumer-oriented, but we forgot to specify "unbiased" as well. This book, like so many on North American bookshelves, has its author's opinion superimposed upon the facts.

This bias is unfortunate, because author Linda Pim has scored extremely well on several counts. The problem of conveying technical information to a lay readership has been ably handled. Organization, into and within chapters, adds greatly to the clarity of the presentation. Most important, the facts are there: what additives are, why they are used in food products, and how they are tested for acceptability in Canada.

Pim states in several places that some additives are justifiable and not a health concern. In fact, of the hundreds of additives listed in the appendix (all of them permitted in food by Canadian law), she singles out only 46 as of questionable safety. Yet the tone of the book as a whole is heavily anti-additive. The

book's cartoons are in rather bad taste; fortunately there are few.

The most serious omission from the book is a discussion of the risk-benefit issue. The fact that benefit at times outweighs risk is mentioned at one point, but given no weight. An entire chapter is spent describing the risks incurred by consumption of certain additives, yet their beneficial effects on our food supply are seriously down-played. Pim directs her readers to "make an informed choice" in the supermarket, yet denies them this possibility. Consumers should know what they give up when they demand the removal of additives.

Professionals, this book is for you. Its wealth of information is bound to include some facts you didn't know and they're well organized for easy reference. But pass the facts — not the book — on to the consumer. Few lay persons have the background to separate the actual from the attitudinal.

Reviewed by:
Ruth Loewen, B.H.Ec.
Winnipeg

Additive Alert, a project of the Pollution Probe Foundation, has provided the Canadian consumer with a much needed publication regarding the use of food additives in Canada.

While the author does point out that all additives are not harmful, she cautions the reader about potentially dangerous chemicals. Names and addresses of government agencies and food manufacturers are supplied. An excellent food additive index has been compiled.

As a dietitian working almost exclusively with additive-restricted diets, often combined with allergy diets, I recommend this book to the majority of my patients.

Reviewed by:
Jane McNicol, R.Dt., Clinical Dietitian, Alberta Childrens' Hospital, Calgary

Basics of Quantity Food Production *by JoMarie Powers. New York: John Wiley & Sons, 1979, p. 514; $17.95*

Basics of Quantity Food Production is a text designed for university or college students specializing in hotel and restaurant management, for food service supervisors, chefs, or administrative dietitians. This text is well organized, concise, clear, and easy to understand. Menu planning is not discussed in the text.

The text is organized in three sections. The first section, "Learning to Plan for Food Service", discusses menu analysis considering setting up recipes, forecasting needs, developing schedules, and determining raw food costs. In the second section, "Learning About Quantity Kitchen Operation", the author discusses each area of food production. Three chapters consider the many factors in wise meat purchase and use. The theory in this section can be adapted to suit every food production operation. The last section, "Handling Special Food Problems", discusses the importance of the flavour of food for customer satisfaction, sanitation, use of convenience foods, and nutritional considerations for all age groups, cultures, and therapeutic diets. Basic nutrition concepts regarding the composition of food are also discussed briefly. These topics are rarely covered in food production texts and this is a welcomed idea.

The author has designed this book to be an introductory text for students preparing to be food managers, Students will be impressed with the author's emphasis on the need for efficient organization and thorough planning to be a successful food manager.

Reviewed by:
Lorraine A. Lemmer B.S. (H.E.)
Dietetic Intern, Kitchener - Waterloo Hospital, Kitchener

Mother's Super Diet and **Ulcer Super Diet** *by Caroline Liddell and Nickey Ross. London: Pitman Publishing Ltd., 1977. p. 122 and p. 124; $6.95 each.*

These two books contain recipes and some advice and information for what to eat and how to plan meals during pregnancy or for an ulcer condition, respectively. Their formats are identical with an introduction by Sally Parsonage, consultant nutritionist, followed by chapters of recipes for main dishes, vegetables, desserts, breakfasts, etc. Each chapter is introduced with pertinent information by the authors.

The introduction in each book is very good and the information given throughout would be quite informative and helpful to people in these particular situations. The recipes, however, are the book's drawbacks. Most appear to be quite interesting and delicious, but they cater almost exclusively to the British population. Many food names, brand names and methods of preparation mentioned would be unfamiliar to the general Canadian population. Measurements, while given in imperial and metric, would often still need some converting by the Canadian homemaker before she could use them. For these latter reasons, I would not recommend the books for the general Canadian public. For those familiar with British terms, the books do offer some interesting recipe ideas.

Reviewed by:
Lyndsay Schauer, Dietitian
Calgary General Hospital.

Food Fundamentals *by Margaret McWilliams. Toronto: John Wiley & Sons, Inc., 1979, p. 670; $16.95.*

Food Fundamentals is a concise, well-written book about the basic principles of food preparation and food science. It is designed for introductory food preparation courses at the college and university level. The author recognizes that most courses differ significantly so the chapters are complete in themselves to enable study to be organized in the sequence that best fits the classroom situation. The section on "food science" is appropriate for students with a chemistry background and includes the technical and scientific aspects of colloids, proteins, fats and carbohydrates.

A useful addition to the 1974 edition is the chapters on the basic principles of microwave cookery and the purchasing and use of fats and oils.

Photographs, illustrations and charts are appropriately included throughout the book.

Nutrition information is given in the chapter on "meal management" with a very brief description of the functions and sources of the major nutrients. Readers should be reminded that the guidelines of the Basic Four are not the same as the recommendations in Canada's Food Guide. Similarily, the U.S. R.D.A. is different from the Canadian Dietary Standard.

American information differs also in the sections on grading, nutrient labelling and food additives.

Food Fundamentals would be an excellent resource for food preparation and food science classes. It is also a useful addition to the library of professionals involved in adult education courses.

Reviewed by:
Lynda L. Clark, B.H.Ec., M.S.
Nutrition Specialist, Winnipeg

Energy Education — The Mizer Series

A need for energy education for young children ages three to six, led to the development of the *Mizer Series.* The ultimate goal of the program is to help children and their families improve their quality of life through wise management of energy.

The *Mizer Series* has two parts: the school-based early childhood curriculum and the home-based family activities. The parts can either be used together or separately. The school-based curriculum includes activities and information related to the following concepts: energy transfer, using energy wisely, and sources of energy. The home-based program is based on a series of letters with activity ideas.

The *Energy Mizer* series is available for $3.50 from the: Students Union Bookstore, Oklahoma State University, STILLWATER, Oklahoma 74074.

Food Fundamentals

A shortage of information on foods and nutrition is not a problem — but often times the sources are many and varied. Two federal government departments have developed comprehensive programs to assist consumers in obtaining more value for their food dollar, and to assist them in understanding Canada's total food system.

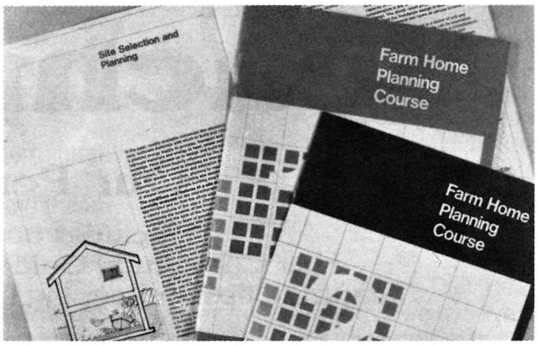
Food Basics, developed by Consumer and Corporate Affairs Canada, aims to help consumers develop good food shopping skills by guiding them toward wiser food choices. It focuses on food labelling information as a source of information. *Food Basics,* is written in the form of Leaders' Guides, and contains teaching ideas, activities and quizzes so that it is easily adapted to many teaching situations. The information is divided into eight guides — The Grocery Store Game (includes a slide set), Planning Your Food Dollar, Meat and Alternatives, Fruits and Vegetables, Breads and Cereals, Milk and Milk Products, Convenience and Other Foods, Behind the Scenes and Shopping Safeguards. Information on obtaining this excellent teaching package is available from the district offices of Consumer and Corporate Affairs Canada.

Food Price Dialogue, developed by Agriculture Canada, is an information kit aimed at creating a better understanding, on the part of consumers, of the food and agriculture system in Canada, and of the factors behind food costs. The kit includes a slide set titled *Factors Behind Food Costs,* as well as six information booklets on the following topics — Food Prices, Food Demand and Consumption, the Agriculture Sector, Food Supply and Processing, Marketing Boards, and Value for the Food Dollar. The kit is available from provincial Agriculture departments across Canada.

Farm Home Planning Course

The Farm Home Planning Course is a comprehensive guide to all aspects of farm home planning and remodelling. Although the emphasis is on farm homes, the information can easily apply to an acreage or urban site.

The complete course of over 400 pages and almost 400 illustrations is an excellent all inclusive source of housing information useful now and for future reference.



There are two options available. **Option A** includes eight well illustrated lessons on new home planning and construction. A sampling of the topics covered includes siting the home, financing, new home alternatives, planning, design, construction and utility service. **Option B** provides eight completely illustrated lessons on remodelled home planning and construction. Some of the topics covered in this option include site development, financing, space planning, design, assessing the existing structure, construction and utility servicing.

If you would like a brochure describing the course more fully, write: Home Design, Alberta Agriculture, Box 8070, EDMONTON, Alberta T6H 4P2.

If you would like to register now, send $25 in cheque or money order to: University of Alberta, EDMONTON, Alberta T6G 2G4.

It is essential that you indicate whether you want Option A — new home planning **OR** Option B — remodelled home planning.

Get Cracking — Teaching Guide on Eggs

This colorful and comprehensive teaching guide has been designed to help teachers present detailed sessions on eggs and egg cookery.

The objectives of the guide are:

- to familiarize the students with the egg, its production and marketing
- to illustrate to students how to buy and how to store eggs
- to inform students about the nutritional content of eggs and the role eggs play in the diet
- to demonstrate to students the five basic methods of egg cookery and the functions of eggs in cooking

The guide is divided into eight learning sections, a review section and a resource section. Pre-tests, learning activities, and post-tests are included, as well as educational pamphlets and posters.

If you are interested in obtaining a copy of the "Get Cracking Teaching Guide", contact your provincial egg board for price information.

Hassle-Free Cleaning for Singles

Basic ideas on household cleaning are provided in this humourously written and illustrated bilingual publication. It is available free of charge by writing to: Consumer Services Centre, S.C. Johnson and Son, Limited, P.O. Box 520, BRANTFORD, Ontario N3T 5R1.

Costume and Fashion Bookshop

Collectors of costume and textiles books, particularly those related to fashion, may be interested in getting on the mailing list for catalogues from the *Costume and Fashion Bookshop* in London. Inquiries may be sent to: Mr. Hodges, Queen's Elm Parade, LONDON, England SW3 6EJ.

Heatline

Heatline is a new federal government office set up to help consumers save energy by conserving heat. For booklets and advice on saving energy call Ottawa, toll free, at 1-800-267-9563.

The Microwave Market

The following statistics on microwave markets were provided by the Canadian Microwave Cooking Bureau.

- during 1979 Canadian consumers will spend over $60 million purchasing microwave ovens and accessories.
- over the past six years, over 300,000 Canadian households have invested close to $175,000,000 in microwave ovens.
- by 1984, 18% of Canadian households will be using microwave ovens.
- in the United States, the microwave cooking market is a $1 billion a year industry.
- worldwide, over 10 million cooking appliances are in use today.

The Canadian Microwave Cooking Bureau is an industry organization that provides information on the microwave cooking market. They have a consumer information kit available for $1.00 by writing to: Canadian Microwave Cooking Bureau, Box 964, Station K, TORONTO, Ontario M4P 2V3.

"Cosmic Coinship I"

Learning to Make Allowances

Alberta Consumer and Corporate Affairs, to coincide with the International Year Of The Child has released *Cosmic Coinship I,* a bright, innovative space-age workbook on money management. The publication is a joint project for parents and children to work through together and is targetted at children aged 5-12.

The activities teach planning and management of money to encourage a growing sense of responsibility in the child. Parents are urged to give increased responsibility in decision-making to their children as they succeed in understanding the various concepts, and in managing their own affairs.

While recognizing that each child is different and progresses at a different rate, *Cosmic Coinship* emphasizes the importance of teaching children skills that will enable them to cope with future situations in the market place.

A fold-out *Galactic Goals* poster that permits children to record their progress as they save for future goals, helps to reinforce one of the major concepts in the publication, namely that record keeping is a vital part of effective money management.

The book which is designed to be used as a family activity over a number of years, reflects the theory that children learn best by doing rather than by being told, and recognizes the influence of the family in determining the basic attitudes and habits in young children.

A regular weekly allowance is recommended as the best way of teaching responsibility in money management to children. As well parents are encouraged to allow their children to make their own decisions, and to be patient and understanding as their children attempt to learn the sometimes difficult task of managing their money.

Single copies of *Cosmic Coinship I* are available free by writing to: Box 1616, EDMONTON, Alberta T5J 2N9.

IYC Inspired Publications

World Card Game is a new card game that has been developed especially for children under the age of 12. The game, invented by a development education officer with UNICEF, is based on the familiar favourites like "Rummy" and "Old Maid", but uses cards portraying, through words and pictures, different aspects of the world; poor and rich people, industrialized and agrarian societies, traditional and modern ways of life.

The game is available in both English and French. For more information, contact UNICEF Canada, 443 Mount Pleasant Road, Toronto, Ontario, M4S 2L8.

A world atlas with a difference has been produced by the World Bank in recognition of IYC. The *World Atlas of the Child* brings together data on income and population and child-related information such as number of children, birth rates and numbers of births, life expectancies, infant mortality and death rates, rates and numbers of children in the labour force, primary and secondary school enrollment ratios and pupil-teacher ratios.

A single copy of the atlas is available free of charge from the World Bank, 1818 H Street, Washington, D.C. 20433 U.S.A.

World of Children — Population Bulletin was published for IYC and takes a broad view of children in history, their current problems and needs throughout the world, and directions to be taken for meeting those needs. The booklet is availble free of charge and comes with a World Children's Data Sheet.

Request the bulletin and data sheet from the Population Reference Bureau Inc., 1337 Connecticut Avenue, N.W., Washington, D.C. 20036 U.S.A.

Today's Child . . . The World's Future . . . Children in Canada is a report providing an overview of the situation of Canadian children at this time, and encouraging greater awareness of responsibilities in areas such as education, law and medicine. The report was prepared at the request of the International Council of Women. Copies are available from Mrs. J. Emberley, 297 Woodworth Drive, Ancaster, Ontario, L9G 2M9, at a cost of $3.00 each.

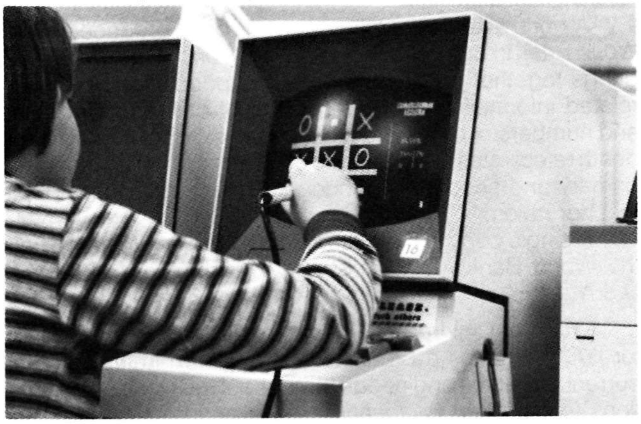
CMHC, through its **Children's Environments Advisory Service** (CEAS), has a number of resource materials available, either free of charge or on loan. Subjects covered in the material include play spaces in public housing projects, day care service development, planning for children in the urban environment, and creative playgrounds. For complete lists of available material, request booklets NHA 5210 and NHA 5211 from the Loan and Distribution Service, CMHC office nearest you.●

Computer Assisted Instruction

Computer Assisted Instruction is one of several new techniques developed as a result of increased educational requirements and the growth of technology. One of the primary aims of computer assisted instruction is to optimize the learning process.

Computer-assisted instruction (CAI) is an outgrowth of B.F. Skinner's work on programmed learning. The technique is based on presenting the subject to be learned in small segments (frames), testing immediately for comprehension and having the student go back to earlier work if the answers are wrong, or on to new material if the answers are right.

The basic principle of CAI is that each student can learn according to his own particular requirements. This not only means that each student can learn as quickly as possible, but also the amount and content of the material can be tailored to individual needs.



CAI programs can be drill and review, consisting of short exercises and tests scored by the computer; or tutorial and dialogue, in which the computer presents concepts, the student responds, and the computer provides immediate feedback. Programs can also involve simulation where the computer is utilized as an information processor and problem solver.

There are definite advantages in using CAI instruction particularly in terms of its ability to be individualized. But CAI is limited by the availability and quality of the software, that is, the prepared materials. As well, there is a high initial cost of installation and maintenance of equipment as well as programming and training costs.

The most widely used system of CAI, Plato IV, was developed at the University of Illinois. It uses a large Control Data Corporation processor, and a terminal containing a specifically developed type of display and slide projection facilities. Consumer education lessons and clothing and textiles lessons, to a limited extent, are available on Plato. In Canada, CAI courses written by the Ontario Institute for Studies in Education (OISE) are part of the regular curriculum of several community colleges. The national Research Council and the Faculty of Education of the University of Alberta have a long history of work in CAI; the computer simulated patients examination developed at Alberta is used regularly in medical examination. Work is presently being done on a Computer Assisted Instruction project in the Faculty of Home Economics at the University of Alberta.

As technology continues to develop, and as educational needs continue to change and expand, the potential for Computer Assisted Instruction will likely increase.

Carpet Labels

The Canadian Carpet Institute has created a labelling system for the durability of carpets. Three symbols, L, M, and P, are used representing "light" (will withstand at least three years wear), "medium", and "plus" longest wear, respectively. Since wear of carpets depends so much on how the carpet is used the labelling system is based on how well the carpet keeps its good appearance. The labelling system is open to manufacturers who wish to have their carpets rated. A panel of industry representatives does the rating. This labelling program was first launched in April of 1979, and is now available to consumers. For more information on this system a booklet titled *Shopping for Carpet? The Classification Label Can Help You* is available in quantity from: Canadian Carpet Institute, 1080 Beaver Hall Hill, Suite #1002, MONTREAL, Quebec H2Z 1T6.

Gasoline Prices

Gasoline is not as expensive as it once was, according to Statistics Canada. Relative to average wage rates, the cost per gallon has declined steadily since 1949, when the price was about 38¢. At that time, wages averaged $1.07 an hour. With the average worker earning about $7.00 an hour today, gasoline should cost $2.48 a gallon, not the $0.80 to $1.00 that is charged. In other words, in 1949 it took 21 minutes of work to pay for a gallon of gas; last year, it took only 8.4 minutes.

"Induction" Ranges

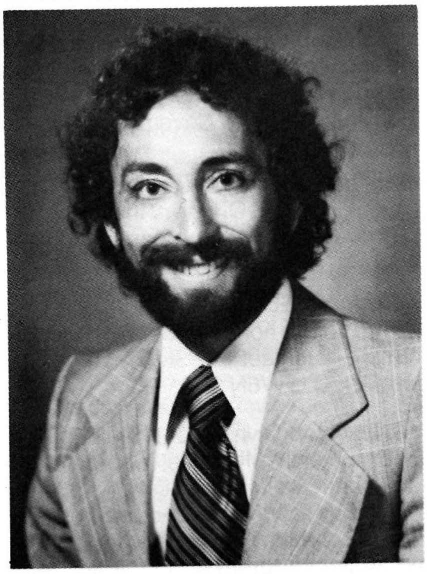
Two U.S. appliance companies are working on ranges which cook by "induction". By sending electric current through a coil underneath the stove top, a magnetic field is created. When a steel pot is put on the stove, it resists the current, causing friction and heat. If the stove is made of material which does not resist the current, it will stay cool while the food cooks. The idea was first tried by Westinghouse in the late 1960's.

Master of Arts in Costume History and Design

New York University now offers a Master of Arts degree in Costume History and Design. The research facilities of the Costume Institute of the Metropolitan Museum are open to students. Internships are available and study abroad is possible by arrangements with the Centro Delle Arti e del Costume in Venice. For more information write to: New York University, School of Education, Health, Nursing & Arts Professions, Division of Arts & Art Education, 239 Greene Street, East Building, Washington Square, NEW YORK, New York 10003.

PREMATURE BABIES CAN BENEFIT FROM MOTHER'S MILK

"The milk of mothers giving birth to premature babies, has unique properties which may be advantageous to their rapidly growing babies", cited Dr. Stanley Zlotkin while speaking to health professionals from across British Columbia and Alberta at the Heinz Infant Nutrition Updates held recently in Vancouver and Edmonton.



A pediatrician at the Sick Children's Hospital in Toronto, Dr. Zlotkin is currently researching the effects of nutrition on the prematurely born human infant.

"The pre-term infant represents a special problem", said Dr. Zlotkin, "since he has missed 3-14 weeks of the gestation in which he is assured of an ideal nutritional milieu from the mother".

Referring to research recently conducted by Stephanie Atkinson at the University of Toronto, Zlotkin said that the composition of breast milk from mothers of pre-term babies, has been found to have a significantly higher level of nitrogen than the milk from mothers who gave birth to full-term babies.

"For a given volume of milk, a premature infant would receive 20% more nitrogen than the full term infant if both were fed his own mother's milk" said Zlotkin.

And since two-thirds of the nitrogen of a full-term baby is required in the last two months of pregnancy, this difference is important.

In addition to the protein composition of the premature infant's mother's milk, the milk was analysed for a number of important minerals. The results showed that 'premature milk' contains adequate levels of many of these minerals to meet the requirements of premature babies during the early weeks of life.

Addressing 300 other pediatricians, nutritionists, dieticians and other health professionals involved in infant nutrition, Zlotkin suggested that in the future, rather than feeding premature babies intravenously, "it is conceivable that limited nutrients which are missing in the mother's milk of premature babies could be added to that milk. Using this type of regime, the infant would potentially benefit from not only the immunological factors present in fresh human milk, but also the appropriate nutrients for optimal growth".

The health professionals attending the day-long symposia heard several presentations on recent developments in infant nutrition in Canada. The Infant Nutrition Updates were sponsored by the H.J. Heinz Company of Canada as part of it's contribution to the International Year of the Child.●

CALORIE INTAKE OF BABIES SHOULD BE LOWERED

A recent study conducted jointly by the National Research Council and the H.J. Heinz Company of Canada shows that infants in the first year of life need less energy than that recommended by the Canadian Dietary Standards.

Dr. David Yeung, the nutritionist primarily responsible for the study states "the babies in our study were achieving normal growth while consuming fewer calories than that recommended by CDS". He said "the CDS recommendation of 117 calories per kilogram of body weight for infants up to six months and 108 for babies seven to eleven months was estimated from observed intakes of breastfed infants up to 3 months old". Yeung added that recent studies show that, in reality, healthy normal babies do not consume that much breast milk.

Dr. Yeung pointed out that the results of his study support those of other recent Canadian studies in showing the CDS recommendation as suitable for up to a month-old baby but excessive by 10-20% for babies three - 11 months old.

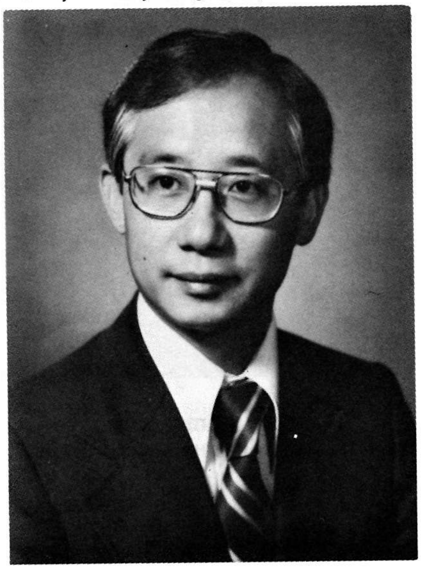
"The CDS recommended energy intake of infants should be lowered" stated Dr. Yeung, at the Heinz Infant Nutrition Updates held recently in Vancouver and Edmonton. The symposia were sponsored by the company as part of its commitment to the International Year of the Child.

Further results from the study, which included 403 babies in Montreal and Toronto, confirmed recent findings that breast feeding is on the upswing in Canada. "Not only are more mothers breast feeding, but the duration of breast feeding has increased", said Dr. Yeung.

The study also shows that the size of a baby is determined by the amount of food and calories consumed and not by whether the baby is breast or bottle fed nor the time solids are introduced into it's diet.

Although not all the data from the study have been fully analysed, a few other interesting facts about feeding practices have emerged.

Dr. Yeung has found that many mothers are feeding babies 2% or skimmed milk, resulting in a lower than the recommended intake of fat in the diet. He suggests that mothers should be encouraged to use whole milk since a diet low in fat means greater consumption of other nutrients. This imbalance of nutrients, among other things, could provide an unnecessary stress to the kidneys of a young baby.



The study also shows that sodium (salt) intake of babies is much lower than figures reported in previous studies, mostly due to eating salt-free commercial baby foods. "Intake, although low, is adequate and meets the daily recommended level", said Dr. Yeung.

Over 300 pediatricians, nutritionists, dietitians, public health nurses and other members of the health profession across British Columbia and Alberta attended the day-long symposia.●

A **Young Canada Works grant** of about $10,000 provided the funds for seven University of Manitoba students, five in home economics, to construct these replicas of 19th and early 20th century clothing for a proposed costume museum at Dugald, Manitoba. The dresses were made for the Dugald Fashion Review for a group which is raising funds for the museum. Over the past two years about 70 outfits have been made. Included among the students involved in the project are **Ms. Kotecki,** a fourth year home economics student (standing right); **Thora Isfeld** and **Peggy Nichols** of home economics (seated from left); and **Denise Prefontaine,** engineering, and **Lois Braun,** home economics (standing from left).

The **Quebec Home Economics Association/Association des Conseilleres en Economie Familiale du Québec** held its founding meeting in June 1979. Through meetings, workshops centred on pertinent and current concerns, and informative newsletters, the association aims to serve the best interests of Quebec home economists. Further information is available from the president of the association, **Margaret Wallace,** P.O. Box 4056, Westmount, Quebec H3Z 2X2. **Judy Griffiths** and **Hugette Lanthier** are co-editors of the association's newsletter, *Ensemble.*

QHEA/ACEFQ will continue to award the bursary orginally given by MHEA to a student of home economics or consumer education at MacDonald College. **The Norah Holcomb Memorial Award** will continue to be awarded. An additional bursary has been offered to the University of Laval for a student majoring in home economics.

The first endeavor of the Quebec Home Economics Association/Association des Conseilleres en Economie Familiale du Québec, a Nutrition Workshop in September, was well attended and a success. Speakers were Shirley Weber, Kay Watson, Elinor Whyte, Norah Christie and Nancy Croitoru.

"Teaching Home Economics to Boys" was the theme of the association's presentation at the **PAPT/PACT** Teachers' Convention in October. A panel discussion moderated by **Tanya Tremblay** consisted of a parent, a student, a teacher, and a consultant in home economics. Each gave varied opinions and innovative ideas on teaching boys home economics. Santa's Workshop will be the theme of November's social meeting.

The **British Columbia Home Economics Association** gives two scholarships annually at U.B.C. One of them is to be named the **Charlotte Black Memorial Scholarship.** Miss Black died on May 11, 1979.

A ***Directory of B.C. Home Economists*** will soon be available for distribution. The cost to non-members of BCHEA is $3.00. For more information contact Pat Stearman, 4264 Musqueam Drive, Vancouver, B.C. V6N 3R7.

Dr. Aaron Altschul, Director, Division of Nutrition, Department of Community and Family Medicine, Georgetown University School of Medicine, Washington, D.C., was the speaker for the **Professor Edna W. Park Lecture** held in October at the University of Toronto. The lecture was sponsored by the **Household Science Alumni Association,** University of Toronto.

The **International Development Research Centre** will offer ten awards for training, personal study or investigation in international development to Canadian professionals in 1980-81. The field or discipline is unrestricted. The stipend is up to $23,000. For further information write Professional Development Award — Canada, International Development Research Centre, P.O. Box 8500, Ottawa K1G 3H9. Deadline for application is February 15, 1980.

The theme for **Manitoba Home Economics Association** meetings this year is "Communications". Speakers scheduled for the meetings will speak on the various ways of communicating through lobbying, letter writing and personal contact. MHEA has begun selling the CHEA metric cookbook, *A Collage of Canadian Cooking,* as a fund-raising project. So far, the outlook is favourable for many sales before Christmas. Manitobans may contact MHEA to obtain the book.

The Cardiac Patient: What is Available? drew a large crowd of various professionals from the Winnipeg area. Guest speakers were from all areas of health care. The sessions were designed for those with cardiovascular heart disease and/or those wishing to prevent such problems. **Dr. B. MacDonald,** Ph.D., Faculty of Home Economics, University of Manitoba, chaired this session. The guest speakers **Dr. Ledwick,** M.D. (a member of the St. Boniface Cardiology Team) described the risk factors associated with heart disease in the light of prevention; **M. Lynch,** R.D. (from Health Sciences Center) reviewed several studies for discussion on the asso-

ciation of a) obesity and b) dietary salt to blood pressure and more specifically hypertension; **E. Wilson,** R.N. described Heart Toc (a post myocardial infarction program). Her description of the problems these patients face in changing their life-style was most enlightening; **L. Diener,** M.Sc., R.D. (Health & Community Services — Home Economics Program) described *A Change for Your Heart,* a package program available to professionals from the Home Economics Directorate. This program is also available to the public via field home economists with Health & Community Services. Ms. Diener asked the audience to start practising prevention themselves and did two activities from the program to get everyone started; **Paul Murata,** R.T. (Co-ordinator of the Re-fit program) described ***Re-fit,*** a physician supervised rehabilitation program, and showed slides of the new building and facilities; and **D. Peace,** M.Sc., R.P.Dt. reviewed the role of industry in education, prevention, and professional development. Several examples of the good results obtained from the co-operation of industry and professionals were given. Proving that keeping fit can be fun, **Vic Coral,** Faculty of Physical Education, University of Manitoba, kept the audience laughing as they exercised during the mid-morning physical fitness break.

Final discussion centered around prevention of heart disease — quite fitting for such a topic.

This program was sponsored by Becel and endorsed by: The Department of Continuing Medical Education, The Dietetic Association of Manitoba, The Manitoba Association of Registered Nurses, The Manitoba Heart Foundation, and The Manitoba Home Economics Association.

The **Western Hemisphere Nutrition Congress VI** will take place in Los Angeles, August 10-14, 1980.

The **Canadian Dietetic Association Conference 1980** will be held in London, Ontario, June 16-19.

A **nutrition symposium** is scheduled for March 10, 1980, at the Four Seasons Hotel in downtown **Toronto.** Sponsored by the Confectionery Manufacturers Association of Canada, the conference will feature speakers such as **Dr. Nathan Smith,** author of *Food for Sport* and Director of the Division of Sports Medicine at the University of Washington. Other topics will include **New Perspectives on Nutrition and Health Disorders; The Psychology of Eating** and **The Snacking Syndrome; Sweeteners Other Than Sugar;** and **How Safe Are Our Foods?**

Those invited to the CMAC symposium will include public health nutritionists, dietitians, home economists, nurses, educators, physicians, dentists and community health workers, representatives of governments, and members of the media specializing in medicine and nutrition. For further information, contact Jane Hope (416) 922-5556 or the Confectionery Manufacturers Association of Canada, #101, 1185 Eglinton Avenue E., Don Mills, Ontario M3C 3C6.

XIV th CONGRESS

of the INTERNATIONAL FEDERATION FOR HOME ECONOMICS

July 21-26, 1980 — Manila

MORE ABOUT THE POSITION PAPER *"INFANT AND CHILD FEEDING"*

A number of persons have expressed interest regarding the background and development of the position paper "Infant and Child Feeding", published in the *CHE Journal,* Fall, 1979 (pp 191-201). CHEA's commitment to make a statement on this topic came at the 1978 conference in Calgary. Committees were encouraged to research current issues and to prepare statements for the Association. Concern had been expressed at the International Development Committee Workshop (held in Olds prior to the conference in Calgary) regarding infant feeding practices in developing countries and 1979, International Year Of The Child, was approaching. These factors came together in the recommendation that the Foods and Nutrition Committee and the Committee on International Development collaborate to prepare a position paper on infant and child feeding.

Alice Jenner in particular worked very hard on the development of the paper, and on behalf of CHEA attended the International Symposium On Infant and Child Feeding at Michigan State University in October 1978. (We are grateful to Alice for her knowledge and expertise.) The first draft of the paper was presented to the CHEA mid-year Board Meeting in January 1979, and was also circulated to committee members and other knowledgeable persons for review. Revisions were made and the final paper was presented and endorsed at the 1979 Board and Annual Meetings in St. John's, Newfoundland.

Copies of the paper are being sent to a number of government and non-government agencies, to express CHEA's concern for the need of increased educational efforts, research, and overall food policy.

In supporting the development of the position paper, the continued assistance of the Canadian International Development Agency is gratefully acknowledged. CIDA funds enabled Alice Jenner to attend the Michigan conference, travel to board and annual meetings, and for joint consultation with the committee chairmen. The support received reflects CIDA's concern for infant and child feeding in developing countries. As stated in the preamble to the paper, many of the concerns are global in scope and apply both abroad and at home in Canada. Canadian home economists, through the CHEA Committee on International Development and its liaisons with agencies such as CIDA are encouraged to examine such issues.

Reprints of the position paper and information on possible courses of action are available from the National Office or from: Lorraine Green, CHEA Foods and Nutrition Committee, 8023 - 22 Avenue, Edmonton, Alberta T6K 1Z2; Jean Steckle, CHEA Committee on International Development, 1C - 300 The Driveway, Ottawa, Ontario K1S 3M6.

Submitted by
Lorraine Green

Readership Survey

When the summary of results for the Readership Survey were compiled for print (see page 219, Fall issue, *CHEJ*) 140 survey forms had been returned. Our latest count is 198 returns. The editors would like to acknowledge this excellent response. Your interest, your comments and your offers to write material for the *Journal* is most gratifying and much appreciated.

A Collage of Canadian Cooking

A historical, sometimes hysterical, evolution of a cookbook

Margaret Fraser

The idea was born and nurtured at the 1976 mini-conference of CHEA in Montreal. A forward-thinking HEIB at the supper meeting introduced the initial persuasion that a metric cookbook would soon be necessary, and since the Laura Secord cookbook had been such a success well, you know how enthusiasm mushrooms.

The call went out across Canada from provincial coordinators, and gradually our members discovered that cooking in metric wasn't hokus-pokus; regional dishes can be equally creative and mouth-watering in millilitres and degrees Celsius. Newfoundland was the first province to send in a completed chapter, with typical menus, delightful recipes and blurbs about the local color.

By July 1978 several provinces had responded with completed chapters, but things were generally quiet on the cookbook scene. So much so, that at the annual meeting of the HEIBs in Vancouver came the startling realization that difficulty is encountered when a volunteer committee tries to write a cookbook. This profound discovery (?) resulted in a call for tenders to finish testing and writing the cookbook, in fact getting it camera-ready. (What a surprise to the committee when only five tenders were received!) The formidable task was awarded to Alyce Wheeler and Cheryl Green of Chatham, Ontario.

While Alyce and Cheryl were up to their millilitres in testing, researching, writing and coordinating the provincial efforts, our committee set out to find a publisher. McClelland and Stewart (of Laura Secord fame) was approached. High hopes were somewhat dashed at the prospects of a fairly expensive $12-$14 book being their recommendation. Mind you, this included marketing and publicity. However, it was felt that a more realistic cost should be in the $7-$8 bracket, that a soft cover would be adequate, and that we might initially give the book to a distributor and do a lot of our own selling.

Webcom, a Toronto printer, was chosen, size agreed on, format, wire-o binding, five full-color photographs, all the details were discussed and approved by our committee. A lot of final writing, editing and proofing was necessary. Fortunately there was a willing — if small — group in Toronto.

A photography session with Fred Bird produced five photographs in two days. An art director was hired to help with the design of the book. His choice for a cover, in keeping with the title, was a collage of the photographs inside the book.

At this point it can be seen that things were progressing much too smoothly — we were meeting deadlines, actually going to press. Well, would you believe that *our* printer was raided and progress on our book was delayed? (It wasn't our manuscript the vice squad was after!) Due to these circumstances, beyond our control, books were not available for our convention in Newfoundland, although final proofs did arrive in St. John's on the last day of the convention.

In August, 1979 our long-awaited cookbook was finally off the press. On 204 pages there is a delightful culinary trip from coast to coast. Each province has set out several typically ethnic or regional menus. All recipes are completely metric and home economist-tested.

For 1980, may we count on you to make CHEA's metric cookbook, *A Collage of Canadian Cooking,* a huge success for the Home Economists in Business section of the Canadian Home Economics Association?

A COLLAGE OF CANADIAN COOKING

Home Economists in Business of the Canadian Home Economics Association have compiled and adapted this collection of recipes of great Canadian dishes.

Please send ______ copy(ies) of Collage of Canadian Cooking at $7.95 each.

Enclosed is cheque or money order of

$ __________ (please do not send cash in mail) No C.O.D. Includes handling and postage.

Send cheque or money order to:
P.O. Box 490, Station A
Scarborough, Ontario
M1K 2N0

ORDER FORM

NAME: ______________________________

ADDRESS: ______________________________

CITY: ______________ PROVINCE: ______________

POSTAL CODE: ______________

INDEX OF ADVERTISERS

Reprints of research and general articles are available
Minimum: 100 copies
Orders must reach the business manager's desk within 30 days of publication

RESEARCH, THEORY AND WRITING WORKSHOP

When

Sept. 25, 26, 27, 1980 Thursday evening, Friday all day, Saturday till noon.

Where

University of Alberta, Edmonton

Why

The purpose is two-fold.

- To refine research skills in areas related to home economics.
- To develop and/or improve skills at writing for various audiences

  i.e. professional and technical journals, newsletters, consumer magazines, newspaper columns, periodicals.

  Sessions are planned around outstanding national and international speakers.

Who

Everyone welcome — students, teachers, researchers, professional home economists involved at the practical level.

ENQUIRE: Dr. A. Kernaleguen, Faculty of Home Economics, University of Alberta, Edmonton, Alberta T6G 2M8

On The Community Front (Continued from page 55)

Lindsay Wikenkamp is co-chairman of the Nutrition Committee and is the nutrition representative for her school. She is also active in the Girl Guide movement.

Jeri Manley is well respected and widely sought in the community for her excellent talks on nutrition. She too is co-chairman of the Nutrition Committee and the nutrition representative for her school. She was actively involved with the nutritious concession stands at track meets. Jeri assisted with the B.C.H.E.A. Nutrition and Fitness Conference.

Myrtle Siebert was a member of the original University Women's Club study group that prompted the formation of Action Nanaimo. She is the past chairman of the Nutrition Committee and is currently the chairman of the Parent Committee to Action Nanaimo. Myrtle coordinated the B.C.H.E.A. Nutrition and Fitness Conference; she and **Carolyn Pfortmueller** coordinated the Metric Conference.

No less important are the services being performed on a more isolated basis — one project at a time. Following is brief mention of only two of these.

B.C. Dietetic Association

The **auxiliary of the B.C. Dietetics Association** is a group of about seventy people who are retired. They have become actively involved in Nutrition Week working in conjunction with the Nutrition Council. This year, the auxiliary worked with public libraries in the Lower Mainland. They interviewed the librarians, gave lists of recommended books, and prepared and distributed posters and information. There were a number of attractive, well used displays as a result of this project.

Planned Parenthood Association

Home Economists who work in the family studies area can find interesting volunteer opportunities with the Planned Parenthood Association. **Judy Adamson** served on the education committee for the New Westminster - Coquitlam district for two years, the last one as chairman. **Carole McFarlane** is a member at large on the board of directors in the Vancouver branch and she also works with the education committee. A project this committee has been working on is finding the most effective way to present a sexuality programme in the schools. They hope to be able to work with other groups such as the handicapped and the elderly.

Perhaps this sampling of volunteer activities in British Columbia will provide inspiration for others. The people involved in these activities attain a real feeling of satisfaction from knowing they are doing something helpful to their fellow citizens and, at the same time, interesting to themselves. ●

Canadian Home Economics Journal Guide for Authors

GENERAL ARTICLES

The *Journal* welcomes articles of interest to home economists and those who share their concerns. Papers related to social issues, issues affecting the home economics profession, updating professional knowledge, and the professional involvement of association members are of particular value. Themes for each coming year are printed in the Winter issues of the *Journal*. Authors are encouraged to write articles with the themes in mind but should not feel bound by this directive.

Because editing is time consuming and publishing costly, it is essential that articles be concise, accurately documented and thoroughly proofread before submission. The editors reserve the right to edit general articles for inclusion in the *Journal* and to send selected manuscripts out for review. When extensive editing is necessary, papers may be returned to the author for revision. Authors are encouraged to use nonsexist language in their articles. One step in this direction is to avoid the use of "he" or "she" when the content refers to both sexes.

Preparing the Manuscript for General Articles

- Submit manuscripts in English and/or French.
- Limit manuscripts to between 8 and 12 pages of double-spaced type (from 2,000 to 3,000 words) excluding references. Reference may be as extensive as required. This results in three to four printed pages in the *Journal*. Manuscripts longer than 12 pages of double-spaced type are considered lengthy and may require extensive editing.
- Type manuscripts using double-spaced settings and leave an ample margin on each side of the page.
- Include sub-headings in the article when appropriate.
- Limit the style for references, citations, and footnotes to either that outlined in the *Publication Manual of the American Psychological Association* or the guidelines provided by *The Journal of Nutrition*. For ease in editing and consistency, APA style is preferred. For an overview of APA style, consult the "Citations" and "References" sections under the heading "Research Section" which follows.
- Include an abstract or summary of 100-150 words in French and English. If the abstract is submitted in only one language, translation services will be provided.
- Obtain permission as necessary for the reproduction of graphics to accompany the manuscript. Include a copy of both the permission and the appropriate credit line for each. There is no guarantee that graphics will be returned but every effort will be made to do so. The inclusion of graphics for general articles is encouraged.
- Include a *title page* which contains the following information:
  - Title
  - Name(s) of author(s)
  - Institution or firm with which author(s) is/are associated
  - Title of position(s) held
  - Degrees held (include granting institution)
  - Additional biographical material as appropriate. A photograph of the author or authors, preferably a black and white glossy, any size, should be included if available
  - Address and telephone number of the author.
- Submit three copies of the manuscript plus a cover letter to:

  Betty Mullen
  20 Marlboro Road
  Edmonton, AB T6J 2C6

  Verna Lefebvre
  Department of Secondary Education
  University of Alberta
  Edmonton, AB T6G 2G5

RESEARCH SECTION

The goal of this section of the *Journal* is to provide researchers directly concerned with the well-being of families and individuals the opportunity to publish in a Canadian journal.

Content

Contributions to this section of the *Journal* include:

- Original research papers
- Review papers related to topics of current interest
- Research forums

Criteria Used to Evaluate Research Articles

- Does the research report focus on a significant problem in home economics?
- Does it generate new knowledge, confirm or refine known facts?
- Are findings interpreted logically?
- Does it use sound research methodology?
- Is it scholarly, well organized and well written?
- Is it presented in a form and length which makes publishing feasible?

Preparation of the Manuscript

Research papers should be organized as follows:

- Title page
- Abstract in French and/or English on separate sheets
- Text of Manuscript
- References
- Tables (one per page)
- Figures (one per page)
- Acknowledgements (on a separate page)

Title Page

Because papers are submitted anonymously to reviewers, the following information appears only on the title page:

- Title of paper — keep as brief and concise as possible
- Name and present position of author(s)

- Institution at which research was conducted and date of its execution
- Name and address to whom galley proof is to be sent
- Number of reprints requested, if any. Information as to the cost is available on request.

Abstract

The abstract page follows the title page and starts with the complete title of the paper but does not contain the name(s) of the author(s). It should be:

- A concise summary of the reseach and should stand on its own.
- Approximately 100 words in length and should not exceed the maximum of 150 words.
- Submitted in both French and English if possible. If this is not feasible, or if the abstract is submitted in only one language, translation services will be provided.

Text of the Manuscript

The author is fully responsible for correct sentence structure, good English and accurate spelling. The style should be readable with a minimum of specialized language.

- Begin the text of the manuscript on a separate page and type with 2.5 cm margin on all four sides.
- Number each page at the top right hand corner. In the left margin, number the lines of each page. This makes reference to a specific page and line easier for the reviewers and author(s).
- Type double spaced and only on one side of the paper.

Citations

- Citations in the text should be by author's surname, date and pages cited if a direct quotation is used.

  Examples —

  Roach and Eicher (1965) found it necessary to . . .

  Davis (1969, p.464) stated, "It is . . .

  Recent research (White, 1965; Black, 1967) supports the findings . . .
- Where reference is made to an article by two and three authors, the first time it appears all names must be listed. In any further reference use the first listed author and et al. Where reference is made to an article by more than three authors, it is acceptable to use the first listed author's name and et al. at all times.

  Example —

  First reference:

  Blue, Casey, and Trirud (1969) reported that . . .

  Any further reference:

  Blue et al. (1959) favor the theory . . .

  Example — referring to a study by Brown, Carey, Smith, Blue and Casey, (1963) use Brown et al. (1963)

References

- All work cited in the paper must be listed among the references. Uncited works should not appear in the references. References are typed on a separate page, double-spaced throughout, alphabetized by first author's surname. Several references by the same author are arranged by year of publication.

  Examples

  Book

  Bietler, E. & Lockhart, B. Design for you. Toronto: John Wiley, 1969.

  Journal Article — journal paged by issue

  Harris, T. The savagery of good will. *Psychology Today*, 1973, 6(8), 33-34.

  Journal Article — continuous pagination

  Harper, D. Percieved child rearing. *Perceptual and Motor Skills*, 1977, 44, 1095-1105.

There should be no abbreviation for the names of journals.

Tables

Tables should be kept at a minimum and only used when they add value to the paper. Type each table on a separate page, double-spaced with complete caption at the top of the sheet. Number each table and refer to it in the text by that number. Indicate the location of the tables as follows:

Insert Table 1

There should be no vertical or horizontal rules except those in the heading and at the bottom of the table.

Graphs and Pictures

Like tables, graphs and pictures should be limited in number and used only when absolutely necessary. Graphs or drawings should be professionally prepared in India ink with a mechanical lettering device. They should have a clear heading and be numbered, e.g., Figure 1. Like tables, each graph is presented on a separate page with instruction in the text as to the place of insertion.

Insert Figure 1

Style and Organization

Scholarly presentation of the research is the responsibility of the author(s). Organize material in a logical sequence and give enough details of techniques so that other readers can understand clearly the execution of the research.

Additional Information

Authors should consult the *Publication Manual of the American Psychological Association* for additional information not given herein.

Submission of Manuscripts

An author's submission of a research paper implies that the paper is based on original research not published elsewhere. Send four copies of the complete manuscript to:

Dr. Anne Kernaleguen
Clothing and Textile Division
Faculty of Home Economics
The University of Alberta
Edmonton, AB, Canada T6G 2M8

Upon receipt of a manuscript, the author will receive an acknowledgement of same. Three qualified persons will be selected as referees. Within six weeks the author should receive a letter giving a summary of the referees' decisions, comments and suggestions. Referees may accept the paper as first presented; they may suggest minor changes; they may recommend major revisions or they may reject the paper entirely. If the author agrees with the reviewers' comments the author should incorporate those suggestions in the second draft. If, however, the author does not agree with the suggested changes, the author can refuse to change and provide justification for that stand. The paper will be published as soon as possible after it is accepted.

1978-1979 BOARD OF DIRECTORS

Past President
Doris Badir
Faculty of Home Economics
University of Alberta
Edmonton, Alberta T6G 2E2

President
Elizabeth Feniak
Faculty of Home Economics
University of Manitoba
Winnipeg, Manitoba R3T 2N2

President Elect
May Maskow
Ryerson Polytechnical Institute
50 Gould Street
Toronto, Ontario M5B 1E8

Vice President
Gail E. Watson
3807 Vialoux Drive
Winnipeg, Manitoba R3R 0A5

Secretary
Barbara Baczynsky
34 Linacre Road
Winnipeg, Manitoba R3T 3G6

Treasurer
Ellen Boynton
16D Arnold Drive
Ottawa, Ontario K2H 6V9

PROVINCIAL DIRECTORS

Term of Office Expires 1980

British Columbia
Pat Stearman
4264 Musqueam Drive
Vancouver, B.C.
V6N 3R7

Alberta
Barbara Cousens
320 Lessard Drive
Edmonton, Alberta
T6M 1A9

Ontario
Bonnie Lacroix
109 - 90 Cordova Avenue
Islington, Ontario
M9A 2H8

Nova Scotia
Colleen Meahan
406 - 28 Brookdale Crescent
Dartmouth, N.S.
B3A 2R5

Prince Edward Island
Regina Revell
Dept. Consumer & Corporate Affairs
Dominion Building
Charlottetown, P.E.I.
C1A 4A9

Term of Office Expires 1981

Saskatchewan
Linda Gracey
612 - 4040 Gordon Road
Regina, Saskatchewan
S4S 6A6

Manitoba
Marlene McDonald
Greater Winnipeg Gas Co.
265 Notre Dame Avenue
Winnipeg, Manitoba
R3B 1N9

Quebec
Tanya Tremblay
350 Cote Vertu, Apt. 408
Ville St. Laurent, Quebec
H4N 1E2

New Brunswick
Ghislaine Arsenault
107 Queen Mary Road
Moncton, New Brunswick
E1A 3P4

Newfoundland
Jill Whitaker
Box 6, Site C
Portugal Cove, Newfoundland
A0A 3K0

Yukon and Northwest Territories
Mary Kathleen Connelly
Suite 11, Box 44
Yellowknife, N.W.T.
X1A 1T8

STANDING COMMITTEE CHAIRMAN

Term of Office Expires 1980

Extension
Linda Caldwell
Ontario Ministry of Agriculture and Food
234 King Street E.
Bowmanville, Ontario
L1C 1P5

Family and Human Development
Catherine Wilson
126 Wimbleton Road
Islington, Ontario
M9A 3S6

Foods and Nutrition
Lorraine Green
Health Protection Branch
9912 - 106 Street
Edmonton, Alberta
T5K 1C5

Public Relations
Jane Langdon
1602 - 6 Forest Laneway
Willowdale, Ontario
M2N 5X9

Nominating
Linda St. Onge
6611 - 36A Avenue
Edmonton, Alberta
T6K 0P5

ACHES *(Ex Officio)*
Cathy McWatters
College of Home Economics
University of Saskatchewan
Saskatoon, Sask.
S7N 0W0

Awards
Doris Badir
Past President

Term of Office Expires 1981

Education
Helen Aboud
P.O. Box 163
St. Francis Xavier University
Antigonish, N.S.
B2C 1C0

HEIB
Louise Dufresne
Robin Hood Multifoods Ltd.
502 - 200 Consumers Road
Willowdale, Ontario
M1J 4R4

CHE Journal
Betty Mullen
20 Marlboro Road
Edmonton, Alberta
T6J 2C6

Membership
Janice Shivers
Brescia College
1285 Western Road
London, Ontario
N6G 1H4

Consumer Economics & Management
Nancy Cook
P.O. Box 6000
Fredericton, New Brunswick
E3B 5H1

Textiles & Clothing
Rose Fedoruk
College Home Economics
University of Saskatchewan
Saskatoon, Saskatchewan
S7N 0W0

Professional Development
Eleanore R. Vaines
School of Home Economics
University of British Columbia
Vancouver, B.C.
V6T 1W5

Foundation Fund
Peggy Tychniewicz
Faculty of Home Economics
University of Manitoba
Winnipeg, Manitoba
R3T 2N2

Legislation & Constitution
Ina Kniep
64 Brenda Crescent
Scarborough, Ontario
M1K 3C6

Metric
Wendy Sanford
Corning Glass Works of Canada Ltd.
135 Vanderhoof Avenue
Toronto, Ontario
M4G 2J3

Resolutions
Betty Crown
Faculty of Home Economics
University of Alberta
Edmonton, Alberta
T6G 2E2

SPECIAL COMMITTEE CHAIRMEN*

Archives
Edna Park
136 South Drive
Toronto, Ontario
M4W 1S1

Convention 1980 Co-chairmen
Leslie Henry
1604, 241 - 5th Ave. N.
Saskatoon, Saskatchewan
S7K 2P3

Joan Finlayson
418 Preston Avenue
Saskatoon, Saskatchewan
S7H 2V2

Committee on International Development
Jean Steckle
1C - 300 The Driveway
Ottawa, Ontario
K1S 3M6

Admissions Committee
Ruth Berry
Faculty of Home Economics
University of Manitoba
Winnipeg, Manitoba
R3T 2N2

REPRESENTATIVES TO ORGANIZATIONS*

Canadian Council on Social Development & Planned Parenthood Federation
To be announced.

International Federation for Home Economics
Lila Engberg
Dept. of Family Studies
University of Guelph
Guelph, Ontario
N1G 2W1

MATCH
Jean Steckle
1C - 300 The Driveway
Ottawa, Ontario
K1S 3M6

S.C.I.T.E.C.
Marilyn McDowell, Chairman
Home Economics Department
Mount Saint Vincent University
Halifax, N.S.
B3M 2J6

Vanier Institute of the Family
Sandra Fraser
R.R. #1, Eardley Road
Aylmer, P.Q.
J9H 5C9

* Non voting members

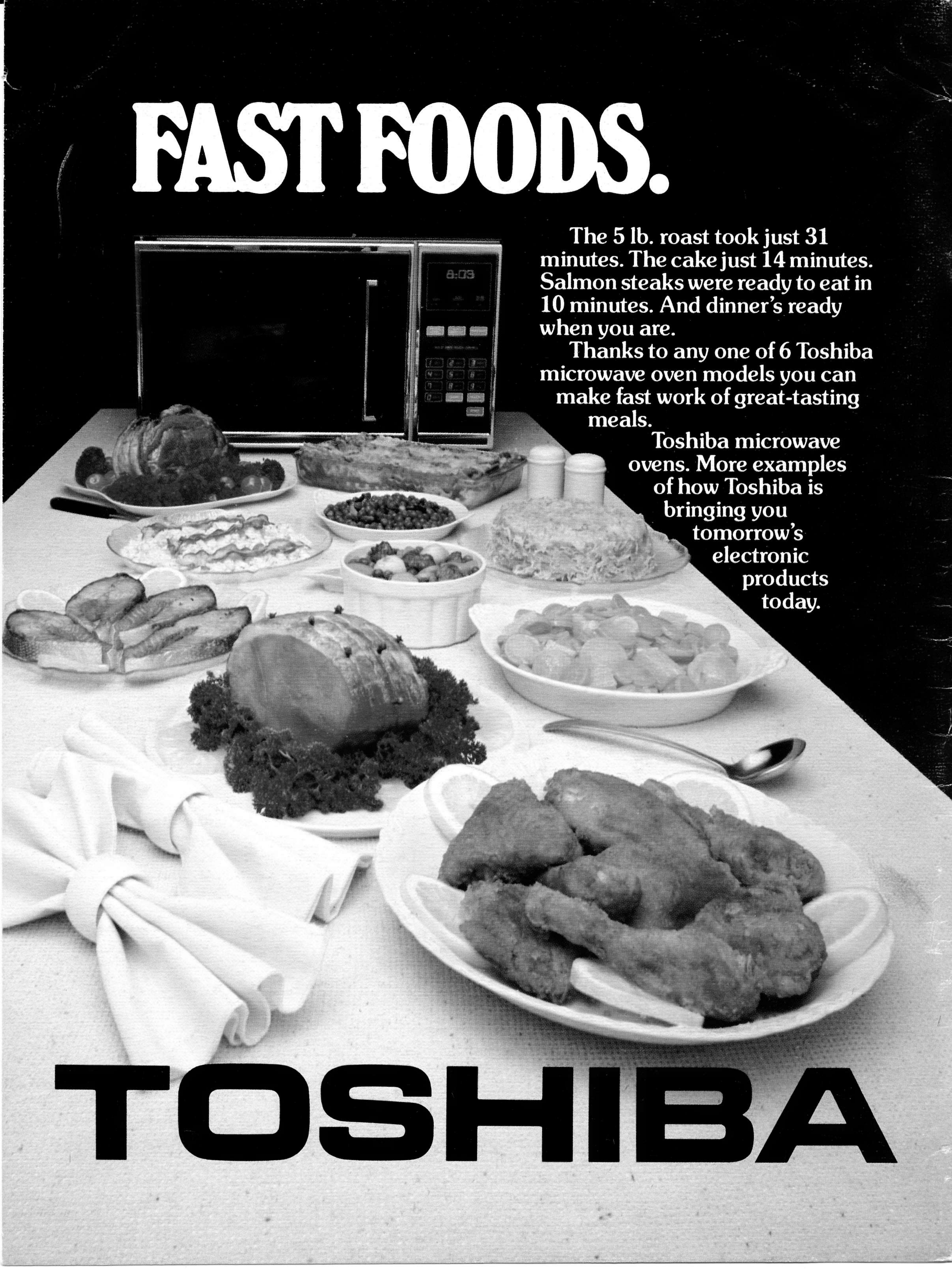
A DATE TO REMEMBER

CANADIAN
HOME ECONOMICS
CONFERENCE

Bessborough Hotel
Saskatoon, Saskatchewan

TECHNOLOGY
PAST PRESENT FUTURE

July 14-17 1980


FAST FOODS.
The 5 lb. roast took just 31 minutes. The cake just 14 minutes. Salmon steaks were ready to eat in 10 minutes. And dinner's ready when you are.
Thanks to any one of 6 Toshiba microwave oven models you can make fast work of great-tasting meals.
Toshiba microwave ovens. More examples of how Toshiba is bringing you tomorrow's electronic products today.
TOSHIBA